THE RUBBER AGE

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THE RUBBER AGE

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Patented Tread Designs As Mediums of Tire Individuality

By Waldon Fawcett

"Can I trade- mark my tire tread?" This question, or a substantial equivalent, has been asked scores of times, within the past year or two, at the U. S. Patent Office at Washington, where the Federal trade-mark register is maintained. It is not always newcomers in the tire trade who have made inquiry. In a goodly proportion of the instances it is firms long established that ask. Perhaps the maker or marketer has a new type of tread of which he is particularly proud and for which he seeks all the protection that the law will allow. Or, even more likely, the quest is prompted by a desire to pile safeguard upon safeguard against limitation or invasion of tire individuality.

Protection for the Design

If a new entrant in tiredom, to whom the identification of merchandise is an unexplored realm, is suddenly confronted with the responsibility of setting his tire apart from all rivals it is quite natural that he should think first of "getting a trade-mark on the tread", as he is apt to express it. To the busy or preoccupied tradesman all the intricacies of trade naming, branding, labeling, etc. are summed up in the term "trade-mark". And because the pattern of his tread is, to the layman, the most distinctive feature of the new tire, its sponsor's first impulse is to shelter it by means of a trade-mark, if such a thing is possible.

The veteran tradesman who covets trade-mark protection for his unique tire "autograph", as the tread ornamentation might be nicknamed, has not, we may suspect, the elementary reasoning of the new recruit in the trade. More likely than not the established trader already has a trade-mark registration covering the very tire, for which he now seeks isolation of the tread. Maybe he has two business badges already accredited to him for this tire,—say a word or symbol and likewise a tire stripe or color streak. Or, at least, his entire line has a house-mark or blanket trade-mark, probably one reminiscent of the corporate name of the concern.

Provisions of the Law

Where the newcomer in the industry aspires to trade-mark rights for his tread design because that seems to be the obvious foundation for such an exclusive franchise, the tradesman already entrenched in the field is ambitious to the same end because trade-mark recognition for his individualistic tread would put one more padlock on his good-will. And, the keener competition grows in the tire industry, the more eager are the canny contenders for reinforced or overlapping protection for the mediums of commercial individuality. Your sophisticated tire man knows that the law allows the use of two or more trade-marks on the same article and so he, logically, covets trade-mark credentials for his tread, no matter what other trade-marks his tire may carry. The tread is so conspicuous a feature that it is unthinkable that it should go unprotected. And, if anything, the trade-mark urge has been stronger since some makers took to incorporating in their tread designs names or initials, or inscriptions such as "good-luck."

With incentive so strong for the recognition of the tread as the business thumb print of the tire maker or distributor,

EXAMINING TREAD DESIGNS, U. S. PATENT OFFICE

it can be imagined with what consternation there is received the doom from the Patent Office that a tread design can not be registered as a trade-mark. The law and the regulations of the trade-mark bureau admit, however, of but one construction. Neither the "form" of an article nor any "structural feature" can serve a trade-mark function. The trade-mark, to pass muster at Washington, must be something different from the article itself which the mark designates. That is why the trade-mark censors have refused, for example, to register as a trade-mark the design on the back of a spoon, or the band on the rim of a pail, or, to get closer to tiredom, the embossed band on the upper margin of a rubber boot.

Happily, for the trade, this cloud has a silver lining. The tire trade stands nary a chance of receiving, at the hands of Uncle Sam, a certificate of trade-mark registration. But the government can supply something that is literally "just as good". The substitute is what is known as a design patent. It costs a little more than a trade-mark credential because, for one thing, it must be renewed at intervals of three and one-half, or seven, or fourteen years. But it affords the best available protection against the trespasser who unconsciously imitates or wilfully infringes a tread design. And the best evidence that the trade is scrambling to take advantage of this protection is found in the fact that, to date, patents

have been issued for more than five hundred different tread designs.

To the tire man who has been wont to think of patents only in connection with mechanisms,—something with working parts,—it should be joy enough to find that there is a special class of patents, which, as though gauged to his specific needs, cover "ornamental designs". On top of that, though, the glad tiding may be whispered that the administration at the U. S. Patent Office has adopted a most liberal attitude toward tire treads because it is recognized that tire treads partake, under present practice, more of the nature of trade-marks than of oranmental designs. It amounts to this, that a tread design can not be admitted to the U. S. Patent Office as a trade-mark but, privately, the official gate-keepers look upon the tire-tread as a super trade-mark and they govern themselves accordingly in determining whether similar tread designs really conflict, etc. etc.

Tread Design a Business Badge

Needless to say, the officials at the Patent Office will not formally or openly admit this. They must ostensibly scrutinize each tread that is submitted to see whether it is "ornamental" as the law requires. But down in their hearts the examiners know that the tread design is a business badge, not a mere embellishment, and that the tire trade so regards it. Moreover, they realize that the conditions of distribution and ultimate consumption are such that a majority of tire users select and identify their purchases by the tread designs rather than by any other guides,—names, or bands of color, or what not. As a result of this tacit understanding we have the referees at the U. S. Patent Office actually judging tread designs by trade-mark standards. And the consequence is that tread patterns need not be as far apart or as dissimilar as designs must usually be to merit patents, but only so distinct from one another as is requisite for avoidance of the dreaded "confusion in trade."

Not all tire interests that seek commercial passports from Uncle Sam nominate their designs as "tire treads". In some instances the specification is "rubber-tire tread" or "pneumatic tire tread" as distinguished from "vehicle tire", the designation usually applied to solid tires. Not a few firms have seemingly sought to invoke the broadest protection by designation of the original conception as a "vehicle tire" or "casing", with drawings illustrative not merely of the tread surface but likewise sectional views and representation of the side walls or the complete tire. Whatever the precise scope of the application, the arbiters at the Patent Office take it for granted that the real objective of the effort for monopoly is the ornamental pattern or "exclusive model" of the tread and act accordingly. They make admissability hinge upon the question whether the submitted design suggests any design "old in the art", even as trade-mark is analyzed to ascertain whether it has been anticipated by another that is identical or so similar that the two would pass as "'doubles".

For all that tire treads are but glorified trade-marks, denied that name, it may be advantageous to tire tradesmen to bear in mind that in order to gain an exclusive license from the government, the tire face must have qualifications different and somewhat more exacting than are required of an ordinary trade-mark.

Designs Must be Original

For one thing, a design in order to be patentable must be "original" with the inventor, that is to say it must not be obtained from another. Moreover the authorities at the Patent Office will not concede that "original", as the word is here used, is synonymous with "new".

Then too, the tread design that is to win a patent must be "ornamental", or, in other words the surface ornamentation must present a pleasing appearance.

Third of the special requirements demanded of the patentable tread or tire design is that it shall be an "invention". To put it differently a tire or casing that exemplified nothing more than mechanical skill could never prove worthy of a design patent. No more would it suffice to adapt devices old in the tire industry. No, the design that is accepted must evidence an effort of the brain as well as of the hand. The reason why we have a design patent law is to encourage those who have the industry, or had we better say the genius, to invent or originate objects that give pleasure through the sense of sight.

If the administrators of the design patent systems enforced the letter rather than the spirit of the law and stood for maximum compliance with requirements, we would have fewer design concessions in operation in tiredom. As a matter of fact, though, considerable latitude is allowed in the construction of the terms of the law. Take, by way of illustration, the requirement that a tire design shall be "ornamental". The men who framed the design patent law were at first minded to demand that an article be "artistic" but they substituted the word "ornamental" and in the enforcement of the law the officials at Washington have been content with an unpretentious degree of intellectual or artistic merit.

Inasmuch as a rubber eraser, a metal sink, and a grass hook have all been officially pronounced "ornamental" it would be inconsistent indeed if the design censors were to demur at

File of Design Patents, U. S. Patent Office

vehicle tires or treads. The circumstance that a distinctive tread design is incorporated in a tire for the sake of appearances in greater degree than for any useful purpose,—or, at least that there is no mechanical function involved,—carries out the idea of ornamentation. For the consolation, too, of tire tradesmen, who are tempted by the idea of the "freak" tire or tread design, it may be remarked that the Patent Office officials, backed by the Federal courts, have declared that for the purposes of eligibility for design patent a design will be construed to be "ornamental" if it be bizarre, grotesque or even ludicrous.

This same lenience is shown usually in determining the amount of invention necessary in order that a design may be patentable. Eminent observers have said, with no intention of disrepect, that in the case of a majority of patented designs the invention is very small and of a low order. But that involves no stretch of the intent of the law because all that the statute requires is the production of a new and pleasing design which may add a value to the object for which it is intended. Most experts have insisted that genius or something closely akin to it, must be exhibited in the conception of the design that is to be rewarded with a patent but the fact remains that a design however simple will pass muster so long as it surpasses what might be expected of any skilled workman in the art.

For all that there is, broadly speaking, this easy going disposition at the U. S. Patent Office with respect to the element of invention that must necessarily be present in a tread or tire design there are certain limitations upon invention that are of particular significane to the tire industry. It is, for one thing, cautioned that a mere aggregation of old well known ornamental devices does not constitute invention in designs. A famous man once said that he was most original who could adapt from the greatest number of sources. That in effect, is the doctrine of the Patent Office. But mere artistic dexterity in grouping forms and figures that are individually familar to the trade or to the public will not suffice. There must be a blending, an arrangement or combination that will produce, as a whole, a new effect or appearance.

(Continued on Page 294)

The Sticking of Rubber

By Andre Dubosc

The question of the sticking of rubber which is the cause of so much trouble to the rubber manufacturer has been studied but little. Exclusive of the work done by Gabriel Bertrand, who did not go into any great detail, we cannot find another reference to cite other than the interesting study made by Brindejonc, whose report is unfortunately too little known to rubber manufacturers.

We have thought it well worth while to analyze this report in all its details and we can affirm that all the observations made by Brindejonc are absolutely accurate and true to fact.

With the idea of rendering the results of this work more generally known, we have summarized the principal points of the same and added thereto several personal observations of our own. In this way we have developed an informative article which we believe will be of a certain value and practical utility not only to importers of crude rubber but to the manufacturers of rubber goods as well.

Sticking a Disease

The sticking of rubber is a veritable disease. Importers of rubber often suffer serious losses due to the fact that the rubber, although sound in appearance, arrives at the port very often in a partly changed condition.

In this state, it is black, sticky, devoid of elasteity: it is then "stické" and has lost thereby the greatest part of its value.

This metamorphosis of the rubber is attributed either to an oxidation effect; or fermentation; to the addition of foreign substances to the latex; to the action of the sun, particularly the ultra violet rays of the sun-light and finally to the materials used in causing coagulation.

In order to determine the reasons for this change in the properties of crude rubber, Brindejonc made a series of tests in which he used Landolphia crude rubber. Landolphia is in French West Africa and is one of the largest rubber producing regions in that colony.

By means of a certain mechanical method, he prepared a pure rubber, by extracting it from the dry Landolphia bark: in this way he obtained sheets of rubber, which were very spongy and very sensitive to the slightest causes of deterioration:

If we check up the constancy of the weight of the rubber, then we can determine very readily that the deterioration which it has undergone is due to a change in the molecular state.

Factors in Deterioration

Brindejonc studied successively the following factors in the deterioration of rubber:

1. The action of sunlight.
2. The action of diffused sunlight.
3. The action of heat without light, within the limits in which it is met in practice.
4. The action of salt, which is used generally as a coagulant in the Niger and Soudan regions.
5. The action of dilute acetic acid and carbolic acid, which can be formed in the serum if the latex commences to ferment.

During the course of these experiments, a fact of the highest significance both to importers of rubber as well as manufacturers of rubber has been developed, namely; *that the rubber, which has been affected even in an almost imperceptible degree by one or the other of the agents indicated above, continues to deteriorate, even when the primary cause of the deterioration has disappeared.*

Hence it is for this reason that when a mass of rubber begins to become sticky for any reason whatever, it will continue in its sticky condition until the entire mass has been converted into a viscous product, which possesses no elasticity and no resistance. The objects manufactured from this sort of rubber are then bound to deteriorate more and more, in spite of the treatment that they receive in the vulcanization process. They are even capable of contaminating other manufactured rubber goods with which they come into contact. Consequently it is apparent that serious risks are incurred when, in order to save a few cents, rubber tainted with this disease of "sticking" is used in manufacturing together with good rubber.

The Action of Sunlight

Three samples of Landolphia rubber prepared in the manner which we have indicated above, were exposed to the rays of the sun: one of these was placed in dry air, another in an atmosphere saturated with moisture and the third in water.

At the end of two hours the first two samples had become very sticky. The sample that had been placed in an atmosphere saturated with moisture was attacked by this deteriorative phenomenon even more strongly than the sample in the dry atmosphere. This difference becomes more accentuated as the duration of the exposure to the sun increases. On the other hand, the sample immersed in water did not undergo any change, even after an exposure to the rays of the sun lasting twenty days.

Other samples of rubber have been exposed to direct sunlight, one under a thick layer of water, the other under a protective covering consisting of a saturated solution of alum. After four hours of exposure, the first sample had became sticky while the other remained intact.

From these observations we may conclude that the action of sunlight on rubber is constituted particularly of a calorific effect, that is, it is the heat of the sun's rays that brings about the phenomenon of sticking. The raw rubber is burnt to a certain degree, it is subjected to a sort of decomposition by heat, analogous in a marked degree to the action of the sun's rays on the skin, resulting in sun-burn.

The Action of Diffused Light

If the light is of moderate intensity, it does not produce the phenomenon of sticking, even at the end of three years of exposure.

If the light is strong, the rubber becomes sticky. The rapidity of this action increases as the humidity of the air becomes greater. An elevated temperature promotes the reaction.

The action is very strong on the ordinary commercial Landolphia rubber which is bought in balls and at a constant temperature, it is much more rapid than on the samples prepared in accordance with the method which we have described above. The ease with which "sticking" is produced in ordinary Landolphia rubber is probably to be attributed to the salt that is used in the coagulation process and that is retained in the balls of rubber.

The Action of Heat in the Dark

Even in equatorial lands, rubber free from all harmful substances or rubber coagulated with salt, but otherwise absolutely dry, does not deteriorate no matter how long it is exposed to the action of heat in the dark. It seems that the enzymes, to which the deteriorative action is assigned, are incapable of acting in an anhydrous medium. However if moisture is present then the sticking phenomenon takes place at once, just as effectively on standard rubber as on the salted rubber. The development of the sticking action is more rapid as the temperature increases.

The Action of Salt

Samples of standard Landolphia rubber or of Landolphia bark were dipped into solutions of sodium chloride of the concentrations 1:100, 1:250 and 1:500.

In a humid atmosphere and at a temperature varying from 25 to 40 degrees C, when the tests were made in the dark, the action of 1:100 solution was apparent at the end of 20 days: on other hand the other two solutions—1:250 and 1:500 did not have any effect until 30 days had elapsed.

Consequently very small amounts of salt in the rubber, even

Le Caoutchouc et la Gutta Percha June 15, 1921. 10911-10913.

when the rubber is not exposed to sunlight, are able to produce the phenomenon of sticking.

Up to the present time no importance has been attached to the presence of sodium chloride in the ash obtained by the burning of rubber. Brindejone's work, however, shows that salt, far from being inoffensive, plays the part of a producer of sticking and is capable, although the action is slow to be sure, of causing the entire mass of rubber to become sticky throughout. From its superficial appearance, the rubber containing salt is apparently in a good condition.

Hence, in analyzing an old rubber, it is of the highest importance to determine its sodium chloride content, for its tendency to stick is a direct function of its content in salt. If this is greater than a few thousandths of a per cent, the rubber should be washed immediately in order to prevent it from becoming sticky. In using rubber to coat fabrics, it is important to see whether or not the sizing used in the cloth contains any traces of salt or of magnesium chloride, which is often used as well for this purpose. This substance just like common salt is capable of producing the phenomenon of sticking in rubber coatings very rapidly, even though the merchandise is placed in a place which is absolutely dark.

We have here one of the causes of the sticking of rubber which is very little known and to which we cannot call the attention of the rubber manufacturers too often or too strongly: the presence of alkaline chlorides or alkaline earth chlorides, either in the rubber or in the sizing in the fabrics with which they work.

The Action of Weak Acids

Under the same conditions of exposure to light and of temperature, Landolphia barks or thin sheets of rubber, impregnated with very dilute solutions of acetic acid and carbolic acid, change at the end of fifteen days and the sticking action brought about in this way develops with great rapidity.

The sticking phenomenon is produced even in samples placed in sealed tubes or in flasks with ground stoppers which have been steri'ized previously.

The action of acetic acid is to be remarked particularly for this substance is used universally in producing the coagulation of plantation rubber.

A rubber which has not been washed sufficiently after coagulation and which contains traces of acetic acid, as a result thereof is capable of becoming sticky very rapidly particularly when it is in the form of thin sheets. This is the case with rubberized cloth.

It is therefore very important, every time that a shipment of plantation rubber is received, to determine if the solution that is obtained by boiling a sample of the rubber contains any trace of acetic acid. If the analysis discloses the presence of the acid, then the rubber must be washed until a neutral reaction is obtained. Otherwise, the rubberized cloth that is made from it will deteriorate very rapidly.

The Continuity of the Sticking Phenomenon

In agreement with Brinejone, I have confirmed by many repeated experiments that once sticking commences to act in a rubber no matter what the cause of the same may be—the action of light, the presence of acids or chlorides—the phenomenon continues and it is not possible to restrain its action.

If the rubber which contains the substances which cause sticking in the dark has not yet been attacked then an immediate and very vigorous and thorough washing is the surest way in which to prevent the action from setting in.

If the phenomenon has set in, then it appears impossible to stop it from running its course, as formaldehyde, bisulphite and all the other antiseptics are of no avail.

Patented Tread Design as Mediums of Tire Individuality

(Continued from Page 292)

No tire man, in quest of a design patent, has an inventive alibi if he has appropriated to his use elements of design which have never been employed in tire ornamentation but which are old in other fields, or in non-analagous arts, as the saying is. The design censors at the patent clearing house at Washington will not wink at the adaptation of old devices to new purposes. That is accounted a double use. For tire tradesmen there is, too, a "joker" in the reservation that mere substitution of one color for another, or change in the size of a design, does not constitute invention such as is demanded by the design patent laws. Not only size but material are immaterial when it comes to appraising designs. It is the ornamental effect, the configuration, etc. that counts.

That only about twenty-five per cent of the designs for tires or tire treads which are submitted at the Patent Office are rejected is due to the fact that so large a proportion of the nominated designs are evolved by professional designers who specialize in tire designs.

By experience and a study of the practice of the Patent Office these specialists have come to know quite accurately how far apart in appearance tires must be to support the claim of distinctive individuality. Also they are intimately familiar with the devices or designs that are old in the art and thus they know what to dodge in compiling a composite design. Incidentally it should be noted that the development of the profession of tire or tread designing explains why it is that so many patents are "assigned" at issuance by the inventor to a tire manufacturing or tire marketing interest. There is, of course, no obstacle in our patent system to such transfer but the assignment must be duly recorded at Washington.

In the estimation of the specialists at Washington the latter-day extreme activity in the patenting of tire tread designs is due in no small measure to the manner in which tread novelties facilitate private branding and the opportunities afforded through this medium for the disposal of "seconds" or non-standard grades. Obviously, a tire manufacturer whose trade-mark or, more particularly, whose brand applied to a specific tire, has come to stand not merely as a merit mark but a guarantee of definite quality, hesitates to jeopardise his good-will by attaching that mark to goods of a lower grade. Yet he cannot, for various reasons, throw into the discard the production that does not attain the highest ideals. The distinctive tread design is his salvation. It enables him to give to lower grade or job lot tires the individuality that is imperative if the goods are to be sold, yet he has in no way compromised his proud trade-mark nor the supplementary trade-marks that exist in the tread designs of his "leaders."

So too sales mobility that is vouchsafed by the versatile tread ornamentation gives to the tire tradesman an opportunity, not equalled in any other line of trade, to engage in private branding to the trade without alienating his regular dealers or agents or lessening the prestige of the line that bears his own name or mark. The tire interest with a factory surplus to dispose of in the domestic or the export market has at its disposal a virtually unlimited number of private brands,—tread designs that may, if need be, drafted as trade-marks.

The only caution that, by the light of experience, is justified in this connection counsels a clear and explicit understanding at the outset, between producer and private brand owner with respect to the ownership of the tread design that is to identify the stock made to order. Presumably, if a distributor has patented his tread design he holds title to the ornamentation even though he contract first with one factory and then with another for the supplies that carry the design. In actual practice, however, misunderstandings have arisen because of the supposition of a tire producer that a customer had transferred to him title in the tire design in the production of which he was engaged. Accordingly it is a stitch in time to incorporate in a private branding contract a stipulation as to design ownership.

Vulcanization of Rubber in Sol and Gel Forms

By Dr. Henry P. Stevens

It is generally agreed that vulcanized rubber is "insoluble" in the ordinary raw rubber solvents.[1] Prolonged heating at high temperatures produces more or less complete dispersion, but this is accompanied by decomposition or degradation of the rubber which is not recoverable in its original state. In a recent paper[2] I discussed fully the limiting conditions of sol formation in the cold. A certain degree of vulcanization is necessary to confer "insolubility," about 0.5 per cent of combined sulphur on a "pure" rubber sulphur mixing, but this amount will be reduced if the specimen is first "aged." On the other hand, sol formation is subject to a time factor and prolonged immersion will result in the dispersion of a specimen which appeared quite "insoluble" when first immersed. Attempts to disperse a fully vulcanized rubber (coefficient 2 to 4) were quite unsuccessful unless the specimen was already degraded or oxidized by long aging or removal of the stabilizing constitutents by acetone extraction.

Helbronner and Bernstein some years ago prepared vulcanized rubber in sol form by the action of ultra-violet light on a solution of the ingredients in suitable solvents. The coefficient of vulcanization of the product was low, the optimum being about 0.5 unit. Further exposure to the rays caused decomposition or degradation of the rubber.

The Object Sought

My objective was the production of a vulcanized rubber sol or gel which on evaporation of the dispersion medium would leave a soft vulcanized rubber of normal properties and normal coefficient. It seemed useless to proceed further with attempts to disperse fully vulcanized rubber without decomposition, and it occurred to me that it might be possible to obtain a vulcanized sol or gel by actually vulcanizing rubber in "solution". It was reasonable to expect that the presence of a solvent might retard, but should not prevent the chemical combination between the caoutchouc and the sulphur. On the other hand I anticipated that the vulcanized rubber, if formed, would separate from the solvent leaving a more or less concentrated vulcanized rubber gel similar to that obtainable by swelling an already vulcanized rubber in the solvent.

An ordinary 10 per cent rubber mixing was dispersed in benzene to give a 10 per cent solution and placed in a stoppered bottle. The liquid was opaque owing to particles of sulphur in suspension. The stopper was then clamped and the whole heated in a digester at vulcanizing temperatures. This resulted in the formation of a clear viscous sol. Obviously the whole of the sulphur had dissolved and there was an apparent increase in viscosity. Contrary to expectation no separation of vulcanized rubber had taken place. Investigations showed that vulcanization in a state of solution or sol form had actually occurred. It is interesting to note that the uncombined sulphur remained completely dissolved even after cooling the liquid. As the amount of combined sulphur amounted to 2/3 per cent as much as 7/8 per cent of sulphur remained dissolved in the vulcanized rubber gel. The contrast between the amount of sulphur dissolved by the vulcanized and the raw rubber gels confirms the conclusion to which Skellon originally drew attention, namely that sulphur is much more readily soluble in vulcanized than in raw rubber.

Behavior Depends on Free Sulphur

Sols prepared by heating with sulphur in this manner deposit films of vulcanized rubber on evaporation of the solvent. The excess of sulphur crystallizes or "blooms" after the solvent has been dissipated exactly in the same manner as a fresh mould cured sample of vulcanized rubber "blooms" or "sulphurs up" on cooling. The exact behavior depends on the excess of free sulphur, degree of vulcanization and other conditions. A film obtained by the vulcanization and spontaneous evaporation of the solvent is indistinguishable in feel and handle from rubber vulcanized by the ordinary dry processes. When exhaustively extracted with acetone a part of the sulphur remains undissolved, and if the vulcanizing conditions are correctly adjusted the coefficient may lie round about the normal figure of 2 to 3. No attempt has been made to vulcanize exhaustively in solution, but specimens with coefficients up to 10 units are easily obtained. Although the film is deposited by evaporation of the solvent, when once obtained it can no longer be dispersed by mere immersion in the same medium provided the coefficient is not too low. The film merely swells in the solvent to a gel like a normal vulcanized rubber. The irreversible stage sets in before the whole of the solvent has evaporated and as a rule as soon as the mass gels. Such gels may be more or less broken up by shaking with fresh solvent, but are not easily dispersed; they may even take up solvent and swell further. On the other hand, it is possible by special treatment to prepare gels which can be dispersed in a solvent to yield sols. These remarks also apply to freshly-made sols which rapidly gel or are already gels on cooling owing to the concentration of the original solution taken for vulcanization or the high coefficient due to prolonged or rapid vulcanization. The behavior of these gels in fresh solvent is also influenced by the time factor exactly as if they had been vulcanized in the dry way and subsequently swollen in the solvent. I found, however, later that similar sols and gels can be made by other methods of vulcanizing. In fact, some few months after carrying out these experiments the process of vulcanizing by means of sulphur dioxide and hydrogen sulphide was published by Peachey, who claimed to be able in a similar manner to produce vulcanized rubber gels by treating raw rubber sols alternately with H_2S and SO_2 gases. In some respects the gels so formed differ from those obtained by vulcanizing with sulphur in the heat as already described. As far as I am able to judge they more closely resemble rubber vulcanized in the cold with sulphur chloride, that is to say, the ordinary cold cure process applied in solution.

Cold Vulvanization Used

Having prepared sols and gels of vulcanized rubber by the ordinary hot vulcanizing process I next tried cold vulcanizing with sulphur chloride and the little used hydrogen persulphide. I worked generally with benzene solutions of masticated plantation crepe rubber and benzene solutions of sulphur chloride of 1 per cent concentration. As with vulcanizing in the heat I obtained sols or gels according to the concentration of the rubber sol and proportion of reagent added. On spontaneous evaporation films of vulcanized were obtained of varying degree of distensibility and other physical properties in accordance with the degree of vulcanization. Very good physical results were obtainable with very small proportions of reagent. The sheets or films differ from those produced by the ordinary cold cure process in that the vulcanization is uniform throughout the mass and is not a mere surface effect.

With high concentrations of rubber and large proportions of reagent gel formation takes place in a few seconds and there is only just time to shake vigorously after adding the sulphur chloride solution to the rubber sol. For this reason it is not practicable to work with rubber sols of higher concentration than about 10 per cent. Using a large excess of sulphur chloride with a 10 per cent rubber sol, the gel first formed is red-brown in color and not stable. Syneresis sets in very soon and the mass contracts to a small volume, expelling the solvent which is still colored, but contains little or no dissolved rubber.

(Continued on Page 297)

Delivered at Fifth International Rubber Exhibition, London, England.

[1] For instance, Porritt: The Chemistry of Rubber, p. 40.

[2] Journal of the Society of Chemical Industry, 1919, 38. 193-196 T.

What to Sue For When a Buyer Refuses to Take His Goods

By Elton J. Buckley

This inquiry, which comes to me from a wholesaler in Cincinnati, Ohio, ought to be both timely and interesting to wholesalers and retailers in almost all fields:—

> Cincinnati, Ohio
>
> We have had a number of cancellations like everybody else, and are thinking of suing a number of our customers to make them take their contracts. Unlike most lines, our cancellations have not come because prices have declined, as we have a controlled trade-marked line which has not changed. Our cancellations have come because our buyers did not have the money to take in the goods, and because the orders are for three or four months ahead, and they believe that our principals will reduce prices before they can sell out. I have studied commercial law and one thing is not clear. What is a buyer who throws down his contract responsible for—can we sue him for the full price of the goods, as if we had delivered the goods to him, or are we compelled to sue him for the difference between the price in the order and the price that the market has declined to? You can see that if we cannot sue for the full price, but only for the difference in prices, and there has not been any difference in prices, we cannot get much and it would not pay us to sue. I know you are in touch with these questions and will answer.
>
> F. L. Armstrong & Bro.

These cases where buyers refuse to take goods which they have bought divide themselves into two classes.

Two Classes of Cases

1.—Where title to the goods, though not the possession, has in some way passed to the buyer. In these cases you can sue for the full purchase prices, because the goods in a legal sense have been delivered and the buyer must pay for them.

2.—Where title has not passed to the buyer. In these cases, if the buyer serves notice on you that he wants to cancel, you can only sue for your damages. Usually that is the difference between the order price and the price to which the market has dropped. If there has been no drop, there is practically no damage. You still have an action for breach of contract, but can collect only nominal damages. It doesn't pay to sue in such cases.

Consider under the first class of cases how title can pass to the buyer. Title often passes without possession passing. For instance, in sales made in Chicago, f.o.b. California. Under the law delivery of those goods to the railroad in California is delivery to the buyer. He hasn't possession of them and he may not get possession until he pays for them, nevertheless title has passed and if he fails to take the goods you can sue him for the full purchase price.

Terms of the Contract

The terms of the contract determine where title passes, and each case has to stand on its own contract. Where a sale is made f.o.b. at a point, unless a contrary intention appears, "The property in the goods (in other words the title) will pass as between the parties, although the goods remain in the custody of the seller as bailee of the buyer *and notwithstanding the seller has a right to retain possession until the price is paid.*"

Anybody who has the uniform sales act in his State has no particular trouble with these questions, if the contract is to be performed in the State wherein it is made. The uniform sales act, as some readers hereof know, is a model code of law to be applied to the sale of goods. It has been adopted by most of the States, but a few, notably California, where an enormous number of contracts for the sale of goods are made, are still without it. The sales act contains the following sections which make it possible in most of these cases to sue a defaulting buyer for the full purchase price on the theory that title has passed:—

> "Second.—Where goods are shipped and by the bill of lading the goods are delivered to the seller or his agent, or to the order of the seller or his agent, the seller thereby reserves the property in the goods. But if except for the form of the bill of lading, the property would have passed to the buyer on shipment of the goods, the seller's property in the goods so shiped and deliverable shall be deemed to be only for the purpose of securing performance by the buyer of his obligations under the contract.
>
> * * *
>
> "Where in pursuance of a contract to sell the seller delivers the goods to the buyer, or to a carrier or other bailee (whether named by the buyer or not) for the purpose of transmission to or holding for the buyer, he is presumed to have unconditionally appropriated the goods to the contract, except in the cases provided for in the next rule, and in Section 20. This presumption is applicable, although by the terms of the contract the buyer is to pay the price before receiving delivery of the goods, and the goods are marked with the words 'collect on delivery' or their equivalents."

Uniform Sales Act not Always Used

Under these sections you could sue for full purchase price on almost all sales f.o.b. shipping points. But you can't always use the uniform sales act. Take a contract made by a Philadelphia buyer for California goods. The contract is really made in California, because the seller signs it there. Pennsylvania has the uniform sales act, California has not, therefore you have to rest on the general or common law as it is administered in California. The case is the same as between many other States. Where this is the case, the general observations I have made above will be found correct.

In the case submitted to me from Cincinnati, if nothing has been done about shipping or delivering, the seller can merely sue for his damages, in other words, the difference between order price and market price on the day the buyer cancelled. As the correspondent himself points out, this in his case is an empty remedy.

(Copyright, December, 1920, by Elton J. Buckley.)

Exports of Rubber from Brazil and Peru during May

[Consul George H. Pickerell, Para, Brazil, June 3, 1921.]

The following statistics show the crude-rubber exports from Para and Manaos, Brazil, and Iquitos, Peru, during the Month of May, 1921:

Grade.	Para, Brazil.		Manaos, Brazil.		Iquitos, Peru.	
	To Europe.	To United States.	To Europe.	To United States.	To Europe.	To United States.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Fine ...	285,123	893,158	186,118	905,573	48,687	4,431
Medium	34,376	100,784	6,140	136,634	.....	1,093
Coarse .	29,057	155,593	26,675	146,442	1,682	.....
Caucho	66,516	64,891	277,057	365,162	.....	785

ABSTRACTS

Technical — General — Commercial

A Process for Re-using Old Rubber

Rubber waste of all sorts can be resued by passing the material through rolls, which are cooled, so that the kneading process takes place below the fusion point of the sulphur, until the old rubber has been worked up into a plastic mass. If the rolls become overheated in spite of the cooling, then alkalies, Guayule and other sulphur combining substances are added in order to prevent the re-vulcanization of the rubber. (Swiss Patent No. 86,566).

Solid Rubber Tires

British Patent No. 160670 relates to an apparatus used for joining the ends of solid rubber tires. The tires have an embedded helical wire core, the ends of which are pulled together and into which a metal rod or pin is fitted.

FIG.1.

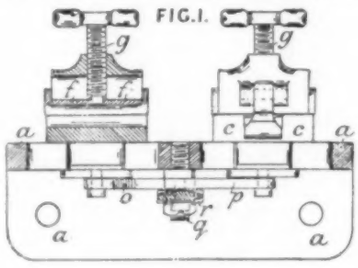
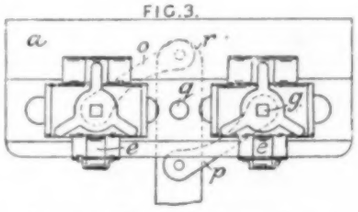


FIG.3.



JOINING ENDS OF SOLID TIRES

The ends of the tire are held in a pair of clamps which can be adjusted so as to move toward or from each other by means of the link connections *o* and *p*. Both of these are fastened to a lever *r* which moves about a vertical axis through *q*. At *q* there is a threaded bolt which holds the level fast to the base plate *a*.

Each clamp has a lower fixed jaw *c* and a pivoted upper jaw *f* fitted with a catch *e*. The ends of the tire are inserted in each clamp and are made fast by operating the screws *g*. The connecting pin is fitted into place and the clamps are forced together by pushing the lever *r*.

The Manufacture of Rubber Products

A resinification effect on the surface of rubber goods which are vulcanized in an atmosphere of hot air can be avoided according to British Patent 142,083, by the incorporation of a reducing agent in the rubber mixture. Such reducing substances are quinol, pyrogallol, the carious tannins and their derivatives, para amino-phenol, formaldehyde derivatives, sulphite and hydrosulphytes. As is well known litharge is used for the same purpose, but this substance causes the development of a black color, which is avoided by the use of the compounds which are mentioned above.

The Deterioration of Rubber in Storage

O. de Vries in the Comm. Central Rubber Stat., Buitenzorg reports on certain experiments made with crude rubber which was kept in storage for 2 to 4 years. It was found that the rubber which was of the first quality did not lose its tensile strength but showed a slight increase in the rate with which it vulcanized. However the viscosity of the rubber decreased considerably in many cases.

On the other hand rubber of poorer quality underwent a marked deterioration in storage. Crepe from matured rubber behaved similarly to first quality crepe, except that its rate of vulcanization decreased.

Acceleration of Vulcanization

A French patent (No. 505701) has recently been issued to the Compagnie Parisienne des Tissus Caoutchouc et simili Cuir on a process for accelerating the vulcanization of natural or artificial rubber and other analogous substances. This is accomplished by the use of nitrocresol. The proportion of this compound in the mixture in respect to the rubber or the sulphur is variable and the process can be effected with good results when almost any proportion of the nitrocresol is used. However, certain proportions have proven to give the best results. The following two examples give the quantities used most generally.

To obtain a soft rubber, 100 kilograms of the crude rubber are thoroughly mixed with 10 kilograms of sulphur and half a kilogram of nitrocresol. After the vulcanization process has proceeded for twelve minutes at 130 to 140 degrees C., the rubber has been completely vulcanized.

To obtain an ebonite rubber of very good quality and very durable, 100 kilograms of the crude rubber are mixed very thoroughly with 40 kilograms of sulphur and one kilogram of the nitrocresol. A two hours treatment at 130 to 140 degrees C will give a hard rubber.

The advantages that are claimed for this acceleration process are that it avoids the addition of litharge and that it permits the manufacture of very thin sheets of rubber in all colors. This has heretofore not been possible in the regular chloride vulcanization process.

The Vulcanization of Rubber

An interesting English patent issued to G. Bruni (patent No. 140,387) describes the use of a salt of a diavalent or trivalent metal with a dithiorearbamic acid derived from a primary or secondary aliphatic amine, for example, zinc pentamethylene-dithio carbamate. The effect of these salts is to cause the vulcanization to take place with as little as from 0.2 at 2 per cent sulphur.

Vulcanization of Rubber in Sol and Gel Forms

(Continued from page 295)

Hysteresis effects are far less marked with these cold vulcanized sols than with those obtained with sulphur in the heat. As stated gelation sets in very quickly, and the consistency of the gels and sols hardly changes after the first hour or two. When kept in the dark sols and gels are very stable. Exposed to light many of the gels gradually change to sols and the sols lose viscosity. As soon as the sol stage is reached an opaque deposit begins to form on the bottom and sides of the containing vessel until eventually the whole or greater part of the vulcanized rubber separates. In some cases the separation takes place in a different manner, a small quantity of the solvent separating out on the surface of the gel, which latter remains as a semi-transparent mass. This, as a rule, gradually shrinks in volume, expelling more of the solvent. The deposit is light colored for sols of a low degree of vulcanization, but dark colored for a high degree of vulcanization. It therefore appears that syneresis is a common property of these cold vulcanized sols. Gels vulcanized with hydrogen sulphide and sulphur dioxide probably behave similarly on exposure to light.

Some quantitative data has been accumulated in the course of this work which I propose to publish shortly.

NEWS OF THE INDUSTRY

News -- Personals -- Financial -- Building Activities -- New Products

Growing Activity in Akron

Production of Tires in Rubber Metropolis Is Eighty-five Per Cent of Normal—Rehiring Progresses—Many Firms Adopt New Methods for Increasing Business

Tire production in the Akron manufacturing district is now within 85 per cent of normal and within 65 per cent of the peak reached in April 1920, accordingto figures obtained from manufacturers and commercial associations in the rubber center of the world. And the trend is still upward, according to these reports.

Production Increases

A recent survey of the tire industry in and around Akron showed that production had reached 75,000 casings and 85,000 tubes daily. Figuring 300 working days to the year, the present production is on a 22,500,000 annual basis.

The Goodyear Tire & Rubber Co. continues to hold the lead in tire production figures. The large East Akron factories of this company started July with a daily output of 23,200 casings and 27,000 tubes. The Goodyear plant in Los Angeles is producing 3,500 casings and 3,500 tubes daily. The total Goodyear production is 86 per cent of the April 1920 average of 31,181 tires daily which was the maximum output reached by that concern, according to the company's own figures.

The production schedule at the Firestone Tire & Rubber Co. calls for the manufacture of 21,000 casings and 23,000 tubes daily. This output is approximately 80 per cent of the best monthly average of last year's boom times.

ing The B. F. Goodrich Rubber Co. started July with an output of 15,000 casings and 16,000 tubes a day, according to a statement made by W. F. Flynn, production manager.

The Miller Rubber Co. is making 4,500 tires and over 5,000 tubes a day.

The American Rubber & Tire Co. is turning out 600 tires and as many tubes a day.

And so on down the line, many of the smaller companies having added more shifts to speed up production to take care of orders from dealers.

If the extremely hot weather of the past month continues throughout the summer, it is estimated that tire demand will keep on increasing as many car owners are running on "thread-bare" casings and have no spares. The hot pavements are responsible for innumerable blow-outs under such conditions and as most of the casings have been repaired to the limit the motorist naturally is forced to go into the market for new casings and tubes.

The heat wave also is driving many motorists to use their cars to reach shady spots or cooling waters of streams and lakes and has greatly added to car mileage.

Hence it is easy to understand the great demand for tires even though automobile manufacturers have ceased to be the large buyers of original equipment that they were last year. The car owner is again using his automobile in pursuit of pleasure and relief from the heat and is wearing out tires.

This great demand for replacements is directly responsible for the present day business. Dealers are giving orders and the popular sizes are not to be found in stock-rooms. Hence the rush to turn out tires to fill the demand while the touring season is still on.

Although the number of men employed has not increased in direct proportion to the increase in production (it formerly was one man for each tire of daily output) Akron is again assuming the aspects of a busy manufacturing city. Street cars are again crowded at rush hours and late shifts pour hundreds of workers into the streets after midnight.

Only Experienced Men Hired

The companies, it is said, are only hiring experienced men. Once the supply of experienced tire builders, buffers, finishers and so forth in Akron was exhausted, the employment bureaus turned to their lists of addresses of former workers who left the city when the slump hit the rubber industry last year. These men are being brought back to take their old places. This doesn't mean, however, that there is a general call for more experienced men. The companies are bringing in former employes only when it is certain that there is a place for them. The employment men are continually warning against any rush back to Akron in the hope that there is an abundance of work and a job for everyone who applies. The unemployment situation has not been cleared up by any means, and there are long lines at factory gates whenever there is any rumor that such a company is taking on men.

This policy of rehiring experienced men has resulted in all production records being broken. Nearly every day rubber workers hear of a new individual or pool mark which has been established in some department of the one of the large companies.

Not only has efficiency in the factories been increased, but the same idea of greater effort has spread throughout the sales and office organizations.

New Sales Methods

Sales executives of the different companies have adopted new methods to increase business among dealers. The Goodyear, it is said, has divided the country up into small districts, has figured the approximate possible sales for that district and has estimated Goodyear's share. The salesman is given a fixed salary and expense, based upon the size of the district. Then he has been told how much Goodyear's quota is in that district. "If you do better than that figure, you get a bonus on all sales above your quota," the sales manager says. And the drive for the bonus has resulted in some surprisingly large sales.

Other companies have different plans. The B. F. Goodrich sales organizations has been divided into squads and contests are being waged between these several groups. The Diamond salesmen got the jump on the Goodrich crew in the tire division during the first part of that contest. And now the Goodrich men are trying to overtake them. Result: greater sales.

No sales manager is overlooking any angle to increase the business of his company. Of course the tire departments got the first call. That was only natural. The huge supplies of raw materials, bought at high prices, were purchased when the tire business was booming. Company executives sought to work off these high-priced materials in the quickest way. So they turned to tires. It takes a lot of material to make a tire, especially a casing for a truck.

Now that the tire sales are booming again, the executives are starting to "pep up" business in the many other lines manufactured in the big Akron plants. Some great sales campaigns are in the making. Rubber manufacturers are going after business as they never went after it before. And repeating the slogan of a big western newspaper "1921 is rewarding fighters."

Fisk Defers Dividend

The directors of the Fisk Rubber Company have deferred action on the dividends on both the first and second preferred stocks. The last distribution on the second preferred was 1¾ per cent on June 15 and the previous disbursement on the first preferred the same on May 1.

Duty on Tires is Revised

House of Representatives Votes to Reduce Duty on Tires from Twenty to Ten Per Cent—Present Duty Same as That in Underwood Tariff

As a result of the fight on the rubber schedule imposing a duty of 20 per cent on rubber tires, the Fordney tariff bill came to a vote in the House of Representatives with the objectionable duty eliminated and an amendment inserted substantially conforming to the tariff advocated by Akron rubber manufacturers.

In the closing hours of the debate on July 20 the House Ways and Means Committee, which had stood subbornly against an amendment, completely reversed itself and reported to the house an amendment lowering the duty on automobiles and bicycle tires from 20 per cent to 10 per cent ad valorem.

The text of the amendment, as adopted by the House, is as follows:

"Page 173, line 24, insert: Automobile and bicycle tires, composed wholly of rubber, or in which the constituent of chief value is rubber, a duty of 10 per centum ad valorem."

The amendment was adopted by the house in committee of the whole and a formal vote was taken in the House, after the bill had been reported from committee of the whole, made the amendment asked by Akron companies a part of the measure as it came up for final passage.

The action of the House Ways and Means Committee in reverting itself on the rubber schedule came as a great surprise to Ohio members of Congress and members of the house generally.

Both Representative C. L. Knight, Akron, and Representative Burton appealed to the committee to report an amendment lowering the duty to 10 per cent ad valorem, as requested by representatives of the Goodyear and Goodrich companies of Akron.

The two Ohio congressmen were met with the statement that the committee was unwilling to report an amendment at this time, since it would open the door for a large number of amendments on other articles, throwing the tariff schedules into confusion.

In the closing hours of the debate, however, Chairman Fordney called a final executive meeting of the Ways and Means Committee in an effort to make changes in the bill meeting attacks which were being made from the floor.

Representative Burton was the only member heard by the committee in executive session. He had asked for a hearing on the silicon schedule, but toward the close of his remarks on that subject appealed to Chairman Fordney for time to restate the argument against the rubber schedule. He then presented to the committee the telegrams of Akron rubber manufacturers protesting against the duty on tires sent to Washington.

The committee held a final meeting on June 20 and a few minutes before adjournment an amendment was reported and adopted by a viva voce vote, reducing the duty from 20 to 10 per cent ad valorem.

The 10 per cent duty now embodied in the bill is the same duty levied under the Underwood Tariff Law of 1903. The Akron rubber manufacturers requested that the tariff of the Democratic measure, now in force, be continued.

It is unlikely that the rubber schedule will undergo further revision in the senate.

Portage Files Schedules

(Special Akron Correspondence)

Bankruptcy schedules now on file in United States district court at Cleveland show that the Portage Rubber Co. of Barberton has liabilities of $5,438,993 and assets of $5,074,337. The schedules were signed by M. F. Long, president of the company.

Notes and bills amounting to $3,144,320 constitute the largest items in the liabilities list. Unsecured claims totalling $1,743,353 are also reported. Among its assets the company lists real estate at $660,994, stock in trade $834,384 and machinery and tools $1,889,880.

The company was thrown into the hands of receivers May 31. George D. Bates, Akron banker, and John W. Maguire, company official, are now in charge of Portage affairs under direction of the court.

U. S. Defers Common Dividend

Action on the United States Rubber Company common stock has been deferred. This announcement was made upon the adjournment of the meeting of directors. However, the regular quarterly dividend of 2 per cent on the first preferred stock was declared, payable July 30 to holders of record July 15.

Lester Leland, vice chairman of the board explained that while the financial position of the company is strong the directors deemed it conservative to postpone action on the common stock at this time. His statement follows:

"The board of directors at their meeting declared the usual 2 per cent quarterly dividend on the preferred stock but deferred action on the common stock dividend.

"The sales for the first six months of the year have been satisfactory under the business conditions that have prevailed.

"The directors have made a careful review of the situation as they see it for the balance of the year and the outlook is encouraging, especially as to tire and footwear sales. While the financial position of the company is strong the directors deem it conservative to defer action on the common stock dividend for the present."

Government Orders for Goodyear

(Special Akron Correspondence)

Government orders for three large dirgibles and 38 observation balloons have been obtained by the Goodyear Tire & Rubber Co. of Akron. These orders, it is said will keep the aircraft department of the big East Akron factory busy for the greater part of the coming year.

Two patrol and scouting airships of 180,000 cubic feet gas capacity will be built for the navy and will be completed next spring. A dirgible of similar size but of a special Goodyear design will be completed for the army by November. All three will be tested at the Goodyear-Akron air station.

The military airship to be built for the army will have many new features of design that makes it the most up-to-date craft in either arm of the service. It will be the first dirgible in America to have its motors in the car instead of in separate power units. Two propellers will be driven by bevel gears at a two to one ratio with transmission placed on outriggers instead of the motors driving direct to while the propellers are idle by throwing out clutches, and will also permit propellers to be reversed—a new feature that will permit greater facility in landing. Either motor can drive both propellers in the event that one motor develops trouble. With both motors inboard, they can be overhauled in flight much easier than if they were on outriggers, as in the present types of airship.

The army ship will be 170 feet long and 45 feet in diameter. It will be powered by two 125 horse-power Aeromarine motors which will operate at 1600 revolutions per minute, but owing to the reduction gear, the propellers will make but 800 revolutions per minute, giving greater efficiency at higher speeds. A speed of 60 miles an hour is expected. The ship's "ceiling" is 10,000 feet.

The car will be entirely enclosed and will house a crew of six, although three men can operate the dirgible for peacetime purposes.

The army will use this airship probably for border patrol, while the two navy ships will be used for scouting and observation.

Providence to Make Tires

J. N. Gunn, vice-president of the United States Rubber Company and president of the United States Tire Company, has announced that the Providence Rubber Company has been organized to take over tire manufacturing operations at Providence heretofore conducted under the name of the Revere Rubber Company, Colt plant, Providence, R. I. The local officers of the company are John J. Shea, vice-president and factory manager, and A. P. Delahunt, assistant-secretary and assistant-treasurere.

This one of the tire plants will continue to be known as the Colt plant. The Revere Rubber Company will continue to operate its large mechanical plant, located near the Colt plant, as heretofore.

News of the Rubber Association

Twentieth Annual Outing Cancelled—Rules Governing Crude Rubber Transactions to Be Revised—Quarterly Meetings of Tire Manufacturers Division—New Transportation Regulations

Annual Outing Cancelled

The twentieth annual summer outing of the Rubber Association of America which had been scheduled to be held at the Seaview Golf Club, Absecon, N. J., on July 21, has been cancelled.

Less than one hundred requests for accommodations at the outing had been received. The board of directors and the outing committee of the Association were of the opinion that it was advisable to omit this outing in the interest of Association economy.

It was the view that the small number of members who had indicated their intention to attend, as compared with the attendance on previous occasions, did not warrant incurring the expense incident to the operation of the special train between New York and Absecon and the other necessary expense connected with the outing.

To Revise Rules Governing Crude Rubber Transactions

At the instance of the Crude Rubber Committee of the Association, a joint committee composed of representatives of the former mentioned body and of representatives of the Rubber Trade Association of New York (membership comprised of crude rubber importers, brokers and dealers), is about to enter into a study of the "Rules and Regulations Governing Transactions Between Buyers and Sellers of Crude Rubber" of the Rubber Association, and the rules and regulations of the Rubber Trade Association, for the purpose of making them cover prevailing conditions and, perhaps more satisfactorily represent common trade prices.

The joint committee referred to will endeavor to harmonize the provisions of the two sets of rules, and will submit recommendations to the Crude Rubber Committee and the Rubber Trade Association in that direction.

Members of the Rubber Association who are not represented on these committees are requested to advise the Association office of their suggestions as to desirable changes in or revision of the rules.

Quarterly Meeings of Tire Manufacturer's Division

The response to the General Manager's letter of inquiry addressed to members of the Tire Manufacturers' Division as to their opinion concerning the desirability of holding regular quarterly meetings of the division as a whole, in addition to the monthly meetings of its executive committee, is very substantially in favor of the suggestion.

It has been considered advisable, however, to postpone the first of these contemplated quarterly meetings until September, and early in that month a definite call will be issued for a meeting of the division, designating the date, hour and location.

Differential Rates via Lake-and-Rail to Trans-Continental Territory

Differentia rates, ranging from 4½ to 23 cents per 100 pounds under the all rail rates, depending upon the volume of the all-rail rate, will be published effective August 10, via lake-and-rail from Buffalo, N. Y., Erie, Pa., Loraine and Cleveland, Ohio, and Detroit, Mich., to Seattle, Portland, Tacoma, Spokane and other points in Washington, Oregon, Idaho and Montana, on shipments routed via the Great Lakes Transit Corporation, Dulutth, Minn., or Superior, Wis., in connection with rail carriers beyond those ports.

These differential rates will be published in Supplement 13 to Trans-Continental Freight Bureau Tariff 4-Q, I. C. C. No. 1085.

These rates should prove attractive to those members who are in a position to take advantage of the routing provided for in the tariff from the eastern lake ports named.

The Traffic Department will be pleased to furnish members with details concerning the rates upon request.

Ratings on Tires in Iowa

A recent investigation by the Traffic Committee disclosed that the ratings on pneumatic and solid tires in the Iowa State Classification applicable on purely state traffic were obsolete.

In accordance with the policy of the Traffic Committee to secure revisions of those state classifications which do not conform with the Consolidated Classification, applicable on inter-state business, the Iowa State Railroad Commission was requested to, and it has now arranged for the revision of the ratings on pneumatic and solid tires to accord with those contained in the Consolidated Classification.

This will place shipments moving between points in the State of Iowa on the same basis as when moving from Iowa points to destinations in other states.

Classification of Used Solid Tire Bases

There has been a difference of opinion concerning the correct rates applicable to old metal bases upon which solid tires are mounted, and to which, after the solid tire is removed, there are at times a small adhesion of hard rubber. In some instances, the carriers have applied rates applicable to the new base, i. e., fifth class in car loads, and in other cases the rates applicable to scrap iron have been applied.

The Official Cassification Committee has now ruled that on old, worn-out bases without solid rubber, the rating applicable to scrap iron or steel, i. e., sixth class, or special commodity rate where published, shall apply, if shipments are described as scrap metal wheel bases having value for remelting or scrap purposes only.

Traffic Committee Requests Reduction in Car Load Rating on Crude Rubber

The Traffic Committee of the Association wil attend a hearing to be held by the Consolidated Classification Committee, which represents all railroads throughout the country, in connection with a number of rate matters, but the principal subject to be given consideration will be the Traffic Committee's request for a reduction in the carload rating in all territories on crude rubber from fourth class to fifth class.

The Association will keep members informed of developments in connection with this subject.

Predicts Brazilian Improvement

As soon as exchange is stabilized, Brazil will offer greater possibilities for American automobile business than any other South American country.

This is the conclusion of W. C. Holmes, representative of the Goodyear Tire & Rubber Company in Brazil, after observing post-war conditions in the South American republic.

American trade in South America was stimulated greatly during the war, and since that time many companies have sent out only high-grade representatives, whose dealings have been conducted on the same clean plane that characterizes American business in this country. By reversing former procedure, American companies have created more friendly business relations than ever before.

Despite the fact that about 17,000 automobiles are in operation in Brazil, the country is handicapped by lack of both transportation and highways. The advent of the automobile has done more than any single agency in hundreds of years to develop better roads, but aside from the fine thoroughfares of Rio de Janiero and sixty miles of good roads from Sao Paulo to Santos, there are no highways over which the great volume of coffee, sugar, hides, lumber and minerals may be transported from the interior to the seacoast.

American-made cars of both popular and higher price predominate in Brazil, as do tires made in the United States, although foreign brands were first introduced long before American companies set out to capture South American trade.

When exchange no longer handicaps Brazilian buyers and existing war stocks bought at high prices are liquidated, Mr. Holmes believes that American automobile and tire companies will be able to dominate the Brazilian market and enjoy a profitable business of worth-while volume, providing they proceed along lines of greater appreciation of Brazilian national customs and business methods.

Republic Rubber Resumes

The Republic Rubber Co., Youngstown, Ohio, has announced that factory operations in the production of pneumatic tires, tubes and solid tires were resumed Monday, July 11. The mechanical goods departments resumed work on Monday, July 18.

News from the Trade at Large

Altenburg Changes Name—Erie Adds to Plant—New Department for F. R. Henderson—National India Closes—Puritan Increases Production—Lee Attains Record Production

Altenburg Changes Name

Word has been received to the effect that the Altenburg Tire Equipment Co. Davenport, Iowa, has changed its name to the Sears Tire Equipment Co. This change follows the recent purchase of the company by the Sears interests. V. D. Sears is president and sales manager.

The new corporation is taking over all the obligations of the old company and all the stockholders will have the same rights and privileges as under the old company.

The new management has approximately half a million dollars worth of new business for acceptance in addition to what has been closed, which means that full operation is assured for the plant during the next 12 months.

Ralph P. Hayes, who has been identified with the Moline Plow company, during the past four years, is now vice-president and general manager of the new concern. Mr. Hayes has had seventeen years' engineering and manufacturing experience with some of the largest concerns in the United States.

Erie to Add to Plant

The United States court at Toledo, has granted permission to the receiver operating the Erie Tire & Rubber Company, Sandusky, O., to expend $32,300 for competion of buildings and additional plant equipment. It is further announced by the receiver that the present force will be doubled as soon as the improvements have been finished.

New Department of F. R. Henderson

F. R. Henderson & Co., the crude rubber importers of 111 Broadway, New York, have recently established a department for handling tropical produce of various kinds. Henry T. Helm, formerly manager for the Wilson-Holgate interests in Colombo, Ceylon, has been appointed manager of this department.

National India Closes

Announcement has been made by the National India Rubber Company that their plant at Bristol, R. I., will be closed Friday, July 15, for an indefinite period. The factory has been running on short schedule time for several months. This shutdown will lay off nearly 4000 employes.

The announcement issued by those in authority at the factory is as follows: ,

"As previously announced, the keds division will shut down indefinitely on Friday, July 15. The packing department will work on Monday, July 18, packing the last day's work.

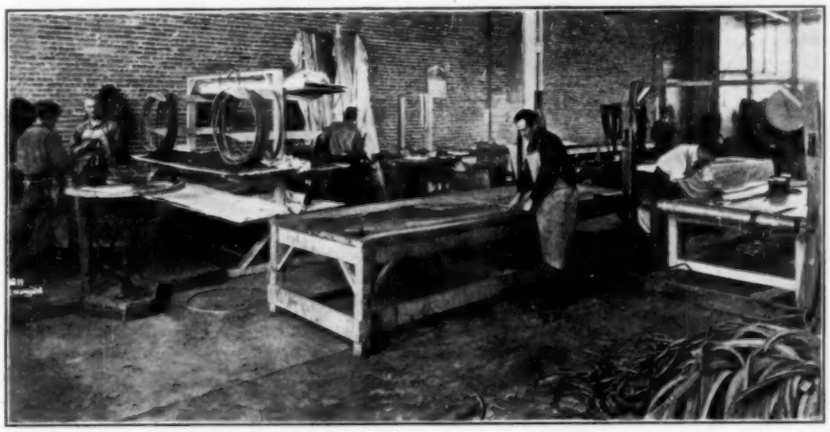
"The wire division will resume operation on Monday, July 18, and it is hoped that orders will warrant a continuation of work in this division well into the month of August.

"During the week of July 18th, employes will be paid on Thursday, July 21, instead of Friday, July 22, and work done in the keds division on Monday, July 18th, will be included in this pay.

"This change is made in order to be of as much assistance as possible to employes who wish to get all wages before leaving town for the shut down period."

Good Business for Odell

Reports recently received from the Odell Rubber Co., of South Bend, Ind., are to the effect that the firm is experiencing greatly improved business. The general improvement in the industry seems to have been particularly reflected in this firm which was formerly known as the International India Rubber Corporation.



Bead Department, Odell Rubber Co., South Bend., Ind.

Puritan Increases Production

The Puritan Rubber Mfg. Co., foot of Perrine Avenue, Trenton, N. J. have recently doubled their production through the installation of additional mills, new four-opening hydraulic presses and a new double deck 17-foot press as well as a new 60-inch calender.

This company was established in 1918 and is engaged in the manufacture of molded mats, perforated mats, molded step treads, corrugated matting automobile running board mats, accelerator heel rests, radiator connections and other molded specialities and mechanical rubber goods.

The officers of the company are: president, Frank Bernstein; vice-president and secretary, M. Marcus and treasurer William Bernstein.

They report exceptionally good demand for their molded goods necessitating 20 hours daily operation since May 1.

Lee Attains Record Production

Current earnings of Lee Rubber & Tire Corporation are running well ahead of dividend requirements, according to a circular letter addressed to stockholders outlining the general situation affecting the affairs of the company. The letter says in part:

"We are sending you the following information regarding the condition of your company at the end of its first six months of operations in 1921.

"The volume of sales for the first three months showed a decrease compared with the corresponding period in 1920. However, since April 1, there has been a marked improvement in sales, making necessary day and night operations, resulting in record production figures. Plant is now working on a ticket of 2,000 tires per day, which is the largest production in the history of our company, and the demand for our tires is now running ahead of the production.

"The company's plant is modern and free from all incumberances. The total bank debt is only $500,000 and it has cash on deposit in excess of that amount.

"Inventories of raw materials are normal and we have no abnormal contracts for future deliveries of raw materials. Ample reserves have been set up for adjustment of such small amounts of materials as we have coming in at prices higher than the present market.

Appleton Plant Shuts Down

The Appleton Rubber Company's plant closed July 1, suspending operations indefinitely. The shut-down is due to the present conditions of the rubber market and insolating business, and it is expected that business will be resumed when market conditions become readjusted.

H. T. West Changes Location

The H. T. West Co., dealers in carbon blacks, rosin products, pine tars, waxes and oils, are now located at 132 Library street, Chelsea, Mass., having removed from their former location at 148 State street, Boston.

Difficulties Encountered in Shipping

Interesting Communication Received by Mid-West Rubber Manufacturers' Association from Spreckles "Savage" Tire Co. Regarding Existing Hardships under Rule 34 of the Consolidated Classification

The following interesting communication relating to hardships incurred under Rule No. 34 of the Consolidated Classification when shipping mixed carloads was recently received by the Mid-West Rubber Manufacturers' Association. The letter follows:

JUNE 16, 1921

The result of our investigation divulges an unwarranted hardship is caused by application of Rule No. 34 of the Consolidated Classification, as applying to shipments by rubber tire manufacturers, which has been substantiated by our actual experience when shipping mixed carloads.

In order that you may readily see the workings of the hardship referred to, we will give you a concrete example.

An order is received for goods, and after it is written up and passes the approval of the proper departmental heads it reaches the shipping department, who in turn arrives at the weights of the various articles in order to know the size of car to order, and find the weights are as follows:

Item	Commodities	Pounds Shipping Weight
1	Pneumatic Tires (Mixed Sizes)	19,000
2	Inner Tubes	1,000
3	Advertising Signs	500
4	Rubber Compounds	1,000
5	Rubber Cement	1,000
6	Office Supplies	200
7	Sample Tire Sections	100
		22,800

It will be noted the total weight of the order amounts to 22,800 lbs. Bear in mind that the tires are of mixed sizes, also that inside car heights of standard cars vary, which can be verified by referring to the official Railway Equipment Register. When loading mixed sizes of tires in such manner to avoid loss and damage claims, it has been our experience that the average loading weight is 18,000 lbs., and it is necessary for the shipper to pay for considerable deadweight, which averages from 1,000 to 2,000 lbs. In order to care for the mixed shipment of 22,800 lbs., it is necessary to order a 40 foot car. The carload rating on automobile tires is subject to Rule No. 34 of the Consolidated Classification, and said rule stipulates that *"when the minimum carload weight provided in the classification for the article shipped is 20,000 lbs., that for a 40 foot car charge not less than 22,400 lbs."* In order to see the injustice to which the shipper becomes a victim, refer to the following comparison:

Item	Commodity	Pounds Actual Weight	Pounds Railroad Billing Weight
1	Pneumatic Tires (Mixed Sizes)	19,000	
2	Inner Tubes	1,000	22,400*
3	Advertising Signs	500	500
4	Rubber Compounds	1,000	1,000
5	Rubber Cement	1,000	1,000
6	Office Supplies	200	300
7	Sample Tire Sections	100	100
		22,800	25,200

* Per Rule 34

Deadweight not shipped 2,400 lbs., and charged for by Railways.

The unreasonableness and injustice of Rule No. 34 applies to shipments of tires forwarded by rubber tire manufacturers in Official, Southern and Western Classification Territories, and is prima facie.

No doubt when you take up this matter for amending of Rule No. 34 as applying to tire shipments, the question will be asked as to why shipper does not load the tires in the car and then forward same, letting the less carload commodities move in the regular way. The answer is that when a customer places an order with manufacturer, he wants to receive his entire order at one time. It is a fact that carload freight makes better time than less carload freight. It displeases a customer to receive part of his order and then, after the expiration of a week or month, have the balance of his order come straggling along part short. Another fact not to be overlooked is that permitting the shipper to load the less carload freight with the carload of tires saves carriers time, trouble and expense of handling the less carload freight loaded, which would have to be done if it moved in the regular way, and in this connection there is less liability of loss and damage to the less carload freight when moved with the carload of tires.

A statement may be made that if Rule No. 34 is amended to alleviate the injustice to which tire shippers are subject, that it would be necessary to do the same for all other commodities moving in carload lots. The answer to this statement would be that the minimum carload weights on other commodities was not increased, but that minimum carload weights on tires have been increased. We believe you will agree with us that it is not a matter of how little weight can be loaded in a car by tire manufacturers, but how much weight they can get in the car.

In bringing up this matter, it is not our desire to break down the intent and purpose of Rule No. 34 of the Consolidated Classification, but it is our desire that permission be granted tire manufacturers permitting them to load less carload freight with carloads of tires without being heavily penalized for so doing.

We recommend application be made that a rule be printed in connection with Item No. 17, Page 426, of the Current Consolidated Classification, pneumatic tires, loose, or in packages, C. L., subject to Rule No. 34, *"except when shipper loads less carload freight with carload pneumatic tires and tubes, a car of greater length may be ordered to care for additional weight, but must not exceed for 600 lbs., of less carload freight a car 37 feet 6 inches length; for 1,200 lbs., of less carload freight a car 38 feet 6 inches length; for 1,800 lbs., of less carload freight a car 39 ft. 6 inches length; for 2,400 lbs., of less carload freight a car 40 feet 6 inches length; for 3,400 lbs., of less carload freight a car 41 feet. 6 inches length; for 8,400 lbs., of less carload freight a car 46 feet 6 inches length; for 12,400 lbs., of less carload freight a car 50 feet 6 inches length.* Freight charges must be assessed on the established minimum carload weight, viz., 30,000 lbs., or on actual weight if greater than minimum weight established. Charges must be assessed on the less carload commodities loaded in the car at their respective less carload ratings."

It will be noted that the recommendation is worked out on a pound basis; however, there is nothing to prevent a percentage basis. It is immaterial whether it is a pound basis or percentage basis, as all that is desired is the elimination of the existing evil; also that the recommendation is somewhat elaborate, which was done purposely in order to avoid any misinterpretation, and it can be boiled down. In view of the fact that the matter is one of mutual interest, to carriers as well as to shippers, also that tire manufacturers received an awful jolt in increased freight rates, notwithstanding the bottom has dropped out of tire prices, we have grave doubts of any carrier, classification committee or commission, objecting to offering relief.

Very truly yours,

THE SPRECKLES "SAVAGE" TIRE CO.
W. C. KOTSENBURG,
Traffic Manager

Mid-West Association Meeting

The regular monthly meeting of the Mid-West Rubber Manufacturers' Association was held at the Chicago Athletic Association on July 12.

At the directors' meeting, the Philadelphia Rubber Works Co., was elected to regular membership, the application being presented by associate members, S. Birkenstein & Sons, Inc. A letter from the Railway Business Association was discussed and the secretary was instructed to comply with the requests made in the letter as far as possible to collect data. Resolutions presented by the National Tire Dealer's Association were read and discussed. Upon motion, the entire matter was laid over until the August meeting.

The success of the meetings in Chicago has aroused the desire on the part of members that meetings be held in their cities. Sidney J. Roy, of Hannibal, Mo., advocated this plan and said, he believed that much good would result by having a regular monthly meeting at Omaha, St. Louis, Indianapolis and other centrally located cities. The Mid-West Rubber Manufacturers' Association has made for itself a name and a place in Chicago, but it is only natural, Mr. Roy said, that other cities should want to share the pleasure and hospitality by having a meeting of this rapidly growing Mid-West Rubber Manufacturers' Association in their cities. Mr. Roy's championship of this proposition brought out many comments which indicate that an effort will be made on the part of the membership to place these well known monthly meetings on a circuit.

Personals of the Trade

Culp Appoints Barrett—Batavia Promotes King—Virginian Rubber Elects —Raney with Western Rubber Mold—Rubber Men to Discuss Safety—Shugart Quarter Century with U. S.

Culp Appoints Barrett

George K. Culp Inc., New York announces the appointment of Murray Barrett as director of distribution, in charge of store development. Mr. Barrett is a tire salesman of a number of years standing and varied connections. He states his

MURRAY BARRETT

popularity with sales managers was of a minus quantity because of his tendency to view situations from the dealers viewpoint, and the Culp plan gives him a long hoped for opportunity to make the dealer the supreme power in the tire industry.

Batavia Promotes Kling

Ernest F. Kling has recently been appointed factory manager for the Batavia Rubber Company. Mr. Kling was Chief Analytical Chemist with the United States Tire Company, Morgan & Wright, Detroit, Mich., and acquired executive ability as assistant-factory manager of a branch factory of the Fiat Automobile Works, having been overseas from 1915 to 1919. Early in 1920 he became connected with the Batavia Rubber Company, first in the capacity of a chemist, later being placed in charge of construction and compounds.

Hunter Visits Exhibition

Harry Hunter, of the Hunter Dry Kiln Co., of Indianapolis, Ind., was a visitor at the International Rubber Exhibition in London June 3-17.

Virginian Rubber Elects

Officers of the Virginian Rubber Co., Charleston, W. Va., were elected at the meeting of the board of directors July 11 as follows: A. A. Lilly, president; Houston G. Young, vice-president; H. E. Shadle, vice-president, all of Charleston; C. H. Thompson, vice-president, Ronceverte; W. S. Johnson, treasurer, Charleston; E. P. Stroman, secretary, Charleston.

The board of directors is composed of A. A. Lilly, H. E. Shadle, W. S. Johnson, W. A. Abbitt, J. Hugh Miller of Thurmond, L. E. Johnson, Alderson; E. S. Baker, Bramwell; W. M. Looney, Spencer; Houston G. Young, C. H. Thompson, E. P. Stroman, W. C. Mitchell, Plymouth; Naaman Jackson of Logan; A. D. Preston, Beckley; J. M. Hopkins, Danville; P. J. Rowan, D. H. Thornton, W. E. Hodges.

Raney with Western Rubber Mold

C. O. Raney, who has been assistant manager of the Miller Tire Repair School, Miller Rubber Co., Akron, Ohio, since June, 1919, has accepted a position as Akron branch manager for the Western Rubber Mold Company.

Mr. Raney has had nine years' experience in the rubber industry. In 1913 he was tube inspector of one of the Akron companies. This work was followed by a position as department foreman. He later became an industrial engineer for another of the large tire companies.

Waterhouse Leaves for Far East

Fred Waterhouse, of Fred Waterhouse Co. Ltd., after a short stay in this country, has left for Singapore. The New York office of this company at 82 Wall St. is in charge of J. C. Holmes as manager.

Rubber Men to Discuss Safety

H. S. Firestone will be one of the speakers at the luncheon to be given in Boston on September 28 by the Rubber Section as part of the program of the National Safety Council Convention.

Dr. Lothar Weber, consulting chemist, of Boston, will be one of the speakers at the Rubber Section's session. It is also expected that Frederick Hood, president of the Hood Rubber Company, will speak on "Safety from the Factory Manager's Viewpoint."

F. J. Hoxie, engineer and special inspector, of the Associated Factory Mutual Fire Insurance Companies, Boston, will give an address on "Fire Hazards and Static Electricity in the Rubber Industry." Mr. Hoxie is recognized as one of the foremost experts on this subject.

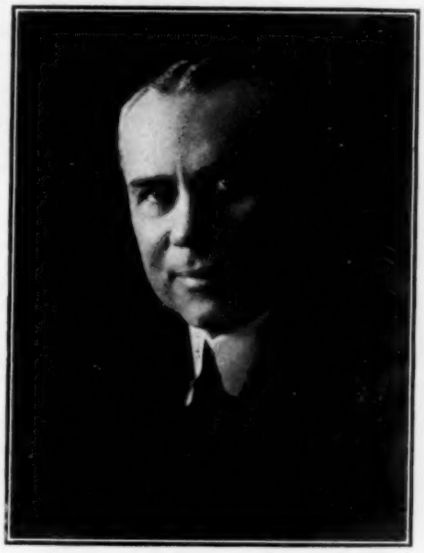
Wilson Returns from West

Harvey Wilson, assistant general manager of the Rubber Association of America, returned early in the month from a several weeks trip among the rubber manufacturers in the West.

Shugart Quarter Century with U. S.

George S. Shugart, vice-president and general sales manager of the United States Tire Company celebrated on June 24, the twenty-fifth anniversary of his connection with that company.

As a youth Mr. Shugart worked for a time in a bank and then donned overalls and began to learn the tire business in the organization of Morgan & Wright, now a part of the United States Rubber Company. This was at the time when the bicycle was at the height of its popularity. He displayed executive ability and



GEORGE S. SHUGART

in a few years became New York branch manager. Fifteen years ago he went to Chicago as branch manager. After Morgan & Wright's amalgamation with the United States Rubber Company he continued to advance, finally becoming Western sales manager. After twelve years in that post he was regarded as the best known tire man in the Middle West. Three years ago he became general branch sales manager for the United States Tire Company with headquarters at 1790 Broadway, New York. A year later he took up the important duties of general sales manager, and later was elected vice-president.

When, more than a score of years ago, Mr. Shugart was selling tires in the New York district, his territory comprised Long Island, two-thirds of New Jersey, all of Connecticut and New York up to Albany, and he was the only salesman for the company in the entire area. To-day more than seventy-five salesmen of the company are at work in the territory he formerly covered alone.

Stedman Visits Europe

Arthur W. Stedman of Arthur W. Stedman, Inc., crude rubber brokers of 68 Broad St., New York, is now in Europe on a business and pleasure trip. After a brief stay in England he will tour Holland and Belgium.

Culp Evolves Novel Plan

George K. Culp, who has been active in the tire industry for the past ten years, and has served in executive positions with several of the prominent companies, has organized under the name of George K. Culp, Inc., a corporation which has established offices at 56 West 45th St., New York City, for the purpose of putting into effect the "Culp Plan" of co-operation in the manufacturing and merchandising of tires, tubes and other automotive accessories.

An issue of $500,000 in eight per cent cumulative preferred stock has been announced recently, for the purpose of purchasing materials, and equipment, and of expanding the chain store organzation.

According to statements by Mr. Culp, the plan is to take the surplus production of tires in this country and market it without waste, at minimum overhead costs. A number of tire manufacturers are engaged by George K. Culp, Inc., to confine their surplus manufacturing capacity for the exclusive production of "Culp" tires. A large number of going tire stores enter into a chain store agreement that eliminates the usual factory and sales expense, by means of the delivery of Culp specification tires at a cost plus basis. The tire manufacturer, just like the "Culp Plan" distributor retains control of his own business, but also becomes a minority partner of the distributor and the latter a minority partner of the manufacturer.

As an indication of the manner in which the "Culp Plan" has been received, it is pointed out that over thirty tire manufacturers and more than 350 distributors are waiting to affiliate with the new organization.

The tire manufacturers, it is claimed, can produce high quality goods at a low cost, having been supplied with a ready and constant retail outlet, without any high selling, administrative, advertising and other expenses, while also having the opportunity of buying raw materials as a large group.

The distributor is put into virtually the position of the manufacturer, so far as the cost of tires is concerned, as the plan permits him to sell a quality tire at a low cost to the consumer, and yet, it is pointed out, with more profit to himself than other merchandising methods permit, since he takes his goods directly from the factory. As part of the Culp organization he is also assured at all times of sufficient quantities of tire merchandise of established and unvarying quality. In short, George K. Culp, Inc., is designed to give to individual distributors the advantage of large buying power, and to manufacturers the advantage of an established market for tires.

The new "Culp Cord" tire is to be a multiple cord tire, of well-balanced construction, and will be manufactured after the most advanced methods. The tread will be one of non-skid design, in which road ability has not been sacrificed in favor of fantastic appearance, nor has sales resistance been created by an unsightly design in favor of technical requirements.

The Culp company will maintain a staff of experts which will take care of the financial, market, technical and commercial problems for the "Culp Plan" distributors. The distributor is also allowed to make his own tire adjustments.

Associated with Mr. Culp as directors in the organization are Clayton C. Dobbs, of Jersey City, N. J.; A. B. Bedford, of Cleveland, O.; S. Galoppo, of New York City, and G. K. Culp, Sr., of Hamilton, Mo. Several of the tire experts are Murray Barrett, F. P. Pullen and G. W. Anderson. The latter was formerly connected with the TIRE TRADE JOURNAL and with the RUBBER AGE, and also served in various capacities with prominent tire companies such as the Miller Rubber Company of Akron, Ohio, and the Gates Rubber Company, of Denver, Col.

Easthampton Rubber Elects

At the annual meeting of the Easthampton Rubber Thread Co., Easthampton, Mass., on June 21 officers were re-elected as follows: clerk Franklin W. Pitcher; treasurer, L. S. Stowe; board of directors William G. Bassett, L. S. Stowe, R. L. Williston, William L. Pitcher, and Franklin W. Pitcher. This is one of the leading firms in the manufacture of rubber bands for the stationers trade and rubber thread for elastic woven fabrics.

McGachen with Rex-Hide

J. H. McGachan, formerly with the Portage Rubber Company and later chief chemist of the Mason Tire & Rubber Company has been added to the organization of the Rex-Hide Rubber Manufacturing Company, East Brady, Pa.

Mr. McGachan has had considerable experience in the construction and manufacture of tires and the Rex-Hide Company wishes to offer his services free of obligation to anyone who is interested in the use of the Rex-Hide products.

Easley Joins French & Handy

William T. Easley, who had been crude rubber buyer for the B. F. Goodrich Co. at Singapore for the past eight years, has taken charge of the foreign department of French & Handy, Inc. with headquarters at the New York office, 347 Madison Ave. Mr. Easey has just returned from a hunting trip in Alaska. The Akron force has been increased by the addition of N. S. Noble, at one time with the Diamond Rubber Co. and latterly with the B. F. Goodrich Co.

Gamundi Sails for Antilles

Frank Gamundi, manager of the Latin-American division of the export department of the Miller Rubber Co., left New York, Saturday July 16 for Porto Rico and Cuba, on a trip which will take from four to six weeks. Mr. Gamundi, before joining the export department and the Miller Rubber Co., had made several trips to Latin-America, particularly the West Indies and northern South America.

Record Rubber Heel Output

The last twelve months have witnessed the increase in rubber heel production to its highest point. Akron alone produced approximately 100,000,000 pairs during the period. Miller Rubber Co. leads all other manufacturers in production, having made more than 40,000,000 pairs during the year. Goodyear followed with 30,000,000 and although Goodrich figures have not been officially given out, it is believed production approximated 22,000,000 pairs. The smaller companies made approximately 8,000,000 pairs during the year.

Composite figures regarding sole production are not available, but this division of the industry has increased very largely during the past year. Goodyear recently received an order for 440,000 pairs of soles from a chain store company.

New Directors for Canadian Goodyear

Reorganization measures have been adopted in the Goodyear Tire & Rubber Co. of Canada which are in line with the general reorganization of the parent company at Akron, Ohio. In connection with the change a new board of seven directors has been elected. A financial adjustment has also taken place which, it is said, was effected in an extremely economical fashion.

In the board of directors as chosen, four directors represent the common stock and three the preferred. The former are as follows: A. H. Carlisle, heading the Canadian plant; E. C. Wilmer, newly elected president of the Goodyear Tire & Rubber Co., Akron; G. M. Stadelman and P. W. Litchfield, vice-presidents of the parent company. Representing the preferred stock are B. A. Thompson, of Nesbitt & Thompson, Montreal; J. A. McAllister, of the Dominion Securities Co., Toronto, and J. G. Lane, secretary of the Canadian company.

It was shown in a report that indebtedness to the Akron parent company had been liquidated with an issue of six per cent prior preferred stock at par. Only $2,826,000 was issued for this from an authorized sum of $4,500,000 the balance of which is not offered for sale. It is stated that of the new common stock of $10 par instead of the $100 issue, every share issued was disposed of for value received or interest due. None of this was issued as a bonus.

Michelin Returns to America

J. Hauvette Michelin, of the Michelin Tire Co., Milltown, N. J., and bride returned to this country from France the middle of July. They will reside in New Brunswick, N. J.

Phoenix Resumes Operations

The Phoenix Rubber Company of Akron, Ohio, now have their tire plant in operation and are producing approximately 500 tires per day.

Rubber Importations for June

A decrease in the importations of crude rubber for June 1921 as compared to those for June, 1920, is recorded in the statistics recently issued by the Rubber Association of America. According to the figures the importations for June, 1921, amounted to 13,477 tons while those for June, 1920, were 14,881 tons. An incease is recorded, however, over importations for May, 1921, which amounted to only 10,732 tons. Total importations of the first six months of 1921, ending June 30, amounted to 78,712 tons, a decrease of almost fifty per cent as compared to importations of 151,889 tons for the corresponding period in 1920.

Heretofore, these reports have been compiled by the association, insofar as Pantations are concerned, on the basis of an average weight of 200 lbs. per case, which was the basis used during the war period. A recent investigation by the Crude Rubber Committee of the association has developed the fact that this basis should be reduced to 180 lbs. per case, as being more representative of the average weights of present shipments.

Therefore, beginning with this report the weight of 180 lbs. per case will be used as a basis for compiling the reports of monthly importation of Plantation rubber and an allowance for this fact should be made when comparing the reports for June, 1921, and subsequent months with those for previous months.

Following are the statistics in detail:

PLANTATIONS

From	Tons
Rotterdam	1,931
London	25
Singapore	6,799
Colombo	1,513
Tandjong Priok	27
Belawan-Deli	945
Batavia	166
Sourabaya	602
Penang	270
Pt. Swettenham	83
	12,361

CENTRALS AND GUAYULE

Centrals (Mexico and Central America)	25
Guayule (Mexico)	—
	25

PARAS

	Tons
Manaos	774
Para	307
Iquitos	10
	1,091

GUMS, WASTE RUBBER, ETC., IMPORTED FROM VARIOUS SOURCES

	Tons
Waste	72
Balata	49
Miscellaneous Gums	203
	324

COMPARISON 1920-1921

	JUNE- 1920	JUNE 1921	Total importations six months ending, June 30th. 1920	1921
Plantations	12,911	12,361	134,403	71,322
Paras	1,352	1,091	12,809	6,602
Africans	427	—	3,610	689
Centrals	27	25	550	38
Guayule	164	—	504	58
Manicoba and Matto Grosso	—	—	13	3
	14,881	13,477	151,889	78,712

ARRIVALS PLANTATIONS FOR JUNE, 1921, SHOWING PORTS OF ORIGIN AND ARRIVAL

From	Arrived at	Tons
Singapore	New York	6,621
Singapore	Boston	35
Singapore	Baltimore	143
Penang	New York	232
Penang	Baltimore	38
Batavia	New York	166
Sourabaya	New York	602
Rotterdam	New York	1,931
Colombo	New York	1,513
Belawan-Deli	New York	945
London	New York	25
Tandjong Priok	New York	27
Port Swettenham	New York	83
		12,361

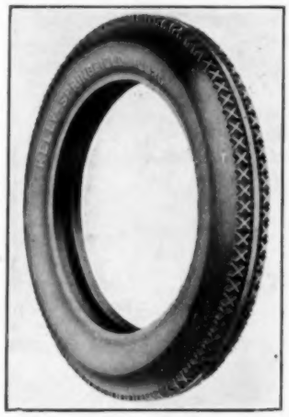
ARRIVALS OF PLANTATIONS BY PORTS

Atlantic Ports	
New York	12,145
Boston	35
Baltimore	181
	12,361

New Kelly-Springfield Tire

The Kelly-Springfield Tire Co. has developed a new Kant-Slip cord tire which has been recently put upon the market. One of the outstanding features of this tire is its tread, which as will be seen in the accompanying illustration is composed of a series of sharp-edged "x's" built up from the tire.

The company contends that the new tire gives evidence of being the most successful that it has ever produced. The full width of the non-skid surface comes in contact with the road, allowing dozens of sharp-edged rubber angles and cross bars, formed by the "x's", to grip the road surface. Wear is distributed throughout the entire width and it is said that the non-skid surface will last as long as will the tread of the tire. The resiliency of the tread makes for easy riding while it is furthermore stated that the small size and frequency of the "x's" serve to break the destructive traction wave.



THE NEW CORD TIRE

India Opens Dallas Warehouse

The India Tire & Rubber Company has opened in Dallas, Texas, a direct factory warehouse, where an abundant supply of all India products, including a complete line of giant pneumatic truck tires will be constantly kept in stock.

In direct charge of this new distributing warehouse will be Harry L. Corbett, formerly affiliated with the Norwalk Tire & Rubber Co. Mr. Corbett will be ably assisted by his associates, C. V. Moore, J. Y. McKinney, and L. G. Trench.

Mr. Moore and Mr. McKinney until recently were connected with the Norwalk Tire & Rubber Company, while Mr. Trench has been identified with the Norwalk Tire Company.

Exports of Rubber Goods for May

Exports of rubber goods for May showed a slight increase over those for April according to the statistics recently issued by the Bureau of Foreign and Domestic Commerce. Total value of exports for May amounted to $3,063,310 while those for April totalled $2,989,928. Exports to foreign countries, exclusive of those to Porto Rico and Hawaii, for May were $2,891,245 wihle the records for April showed a total of $2,779,690. Those to Porto Rico and Hawaii for May amounted to $172,065 while for April they totalled $210,238.

The value of articles exported during May, not including those to our island possessions, were as follows: belting, $112,519; hose, $113,667; packing, $37,-868; boots, $26,920; shoes, $160,406; druggists' rubber sundries, $45,297; soles and heels, $35,364; auto tire casings, $941,880; inner tubes, $95,243; solid tires, $108,797; all other tires, $25,157; all other manufactures of rubber, $327,-436; insulated wire and cables, $860,491.

Exports to Porto Rico and Hawaii for May were as follows: belting, hose and packing, $12,680; automobie tires, $126,-793; all other tires, $4,581; all other manufactures of rubber, $28,011.

Mohawk Announces New Cord

Announcement has just been made by the Mohawk Rubber Company of Akron, Ohio, of a new flat tread cord tire which, it is claimed, marks another long step ahead in tire mileage.

M. E. Mason, sales manager of the company, says that it has been their opinion that the increase in tire mileage from the 3500 mile tires of a decade ago to the 10,000 mile tires of today has been won not by radical changes or mysterious discoveries, but instead that the advance has been made little by little due to careful study and improvements in the details of manufacture.

"This new Mohawk cord tire," says Mr. Mason, "is really the result of three years work along this line. It is hard to say anything about the new tire that sounds sensational, or even makes a good story, except perhaps that from the result of the past two years' mileage tests the new tire is simply a cord tire.

"Two years ago we began putting these tires into service in every section of the country, and in all kinds of service, keeping accurate mileage records on them. We now have these records on several thousand tires and they show quite remarkable results. They averaged over 10,000 miles before the non-skid portion of the tread was worn down and after that gave mileage varying from 50 to 100 per cent more."

New Plant for Monticello, Iowa

Efforts are being made by the Altenburg brothers, of the Altenburg Tire Company, Davenport, Iowa, to finance a tire factory at Monticello, Iowa. J. T. Lanigan and J. J. Hayes of Monticello are respectively president and secretary of the company.

MARKETS

Manufactured Rubber Goods

NEW YORK, JULY 20, 1921

Conditions in the rubber industry have shown a considerable improvement during the last two weeks. In some lines this improvement has been marked, in others there has been very little activity but on the whole it can be fairly said that conditions are better than they were a fortnight ago.

Word recently received from Akron is to the effect that the factories have increased production to a considerable degree. Two or three firms are reported to be operating upon a twenty-four hour schedule but these are exceptions. In the main, however, there seems to be a decided growth in the activity of the rubber metropolis. Men are being rehired, employes who have left town are being recalled to their old positions, and in a great majority of cases production schedules approximating normal have been resumed. Conditions bid fair to improve gradually and this is regarded as an exceedingly healthy sign.

TIRES

Most of the reported activity in Akron is said to be the result of the greatly increased demand for automobile tires which has arisen during the last few weeks. In our issue of July 10 the fact was mentioned that there was a slight improvement for the better in the tire manufacturing business. Since that time, however, conditions have improved to a decided degree. Manufacturer's surpluses have been reduced to a considerable extent as the result of goodly orders coming from tire dealers throughout the country. Inasmuch as the demand bids fair to continue, the manufacturers are resuming operations on a scale approaching normal in order to forestall a possbile shortage of tires.

MECHANICAL RUBBER GOODS

Little improvement has been noted in the mechanical rubber goods field during the past two weeks. Railroad buying remains at a standstill, little or no purchases having been recorded during the period under review. It is stated that the railroads are not even buying for replacement at the present time. Just how long this condition will continue is hard to determine, but one thing is certain and that is when buying once resumes there should be excellent business for everyone who is supplying these mediums of transportation.

Belting and packing for general industrial lines has improved somewhat in demand since the last report. It was hoped that a noticable improvement in demand would occur when prices of these commodities were reduced last June, bue up to the present time sales have not come up to expectations. Air drill hose for use in mininm operations has also fallen off to a considerable degree. Sales to the dredging industry, notable dredging sleeves and suction hose, have been more or less spasmodic.

The season for garden hose is practically over and although this has sold well it is stated that sales have not come up to expectations of the manufacturers.

RUBBER SUNDRIES

Little activity has occurred in the various lines of rubber sundries during the past few weeks. Buying for the various lines of druggist sundries has been of the hand to mouth nature for some time past. It is also stated that hospital supplies are being purchased only to fill immediate needs. The business in hot water bottles has been dull but this was to be expected owing to the fact that the activity in this branch is of a seasonal nature, the demand occuring principally in the fall and winter.

A fair business has been done in bathing caps although not up to that done in 1920 or previous years. On the other hand a number of firms manufacturing toys have reported excellent business, sales of rubber balls having been phenomenal in a number of instances. Golf and tennis balls have, of course, been selling well in view of the current seasonal demand.

Stationers sundries are reported to have fallen off to a considerable degree. One of the reasons given for this is a comparative lack of demand due to the curtailment of office forces throughout the country.

FOOTWEAR

Factors in the footwear industry report a considerable improvement in conditions although it is stated that orders are somewhat limited in size. Some fear is expressed in certain quarters that owing to this a number of retailers may find themselves with little or no stock on their hands should we experience a hard winter. A number of factories of the footwear field have been closed for some time past and accordingly there has been a somewhat limited supply. The supply, however, may be increased in the near future owing to the reopening of a number of these plants. Buying on the part of jobbers is reported to be on a hand to mouth basis, very few sizable orders having been placed within the last two weeks.

RUBBER CLOTHING

An off season has been reported in the rubber clothing industry. A number of mills have closed and sales have not come up to expectations. Fair business is reported in gabardines while macintoshes are said to be absolutely stationary and are not selling. Dealers and jobbers are reported as being in overstocked condition. Manufacturers until recently have had large supplies of goods upon their hands but a period of price cutting on the part of manufacturers has served to deplete these to considerable extent.

Cottons, Yarns and Fabrics

NEW YORK, JULY 20, 1921

The American cotton market in general has manifested signs of improvement since the record low market of June 25 last when middling uplands July options touched the low point of 10.45. Prices have gradually moved up since that date until the present quotation is 12.20 nominally. The volume of business being transacted is small, although consumer buying for future requirements is being noted in increasing measure. With cotton acreage in this country curtailed 30 per cent and fertilizer 50 per cent this was to be expected.

Considerable discussion has ensued as the result of the proposed tariff on cotton. This tariff, it is stated, will be helpful more to the mill operators than to the cotton growers. Imports have decreased to such an extent that tariff protection on 1⅛ inch staple will not effect the domestic planters.

For the nine months of the cotton year just ended imports have totaled 15,190 bales from Egypt, 616 from Peru, 242 from China, 2,533 from Mexico and the total from all other countries 202,242 bales. With these figures protection as embodied in this proposed clause is farcical. It will help the manufacturers of goods, but it will not safeguard the cotton planter of the Mississippi Valley a particle. The figures answer the question of the effect of the proposal. They are sufficiently eloquent to need no further comment.

ALEXANDRIA

Statistics for the week ending June 24, 1921.

	ARRIVALS	EXPORTS (Bales)			TOTAL EXPORTS	STOCK
	Cantars	England	Con'nt	America	Cantars	Cantars
This week	68,273	3,097	1,816	200	38,847	1,989,612
Same week 1920	486	1,170	490	300	14,995	710,472
" " 1919	4,196	11,093	1,178	2,574	109,187	2,508,284
Since Sept. 1, 1920	4,476,245	191,538	140,212	45,706	2,884,835	——
Same time 1919	5,552,801	327,148	124,163	248,274	5,285,329	——
" " 1918	4,736,892	296,935	105,322	50,840	3,335,408	——

July 19 witnessed a conference in Washington between the Federal Reserve Board and the governors of Federal Reserve banks in Richmond, St. Louis, Atlanta, Dallas and Kansas City.

Following the conference the Federal Reserve Board and the governors of the banks announced that the banks, in addition to credits already extended, stand ready to extend further credit for harvesting and marketing the coming cotton crop in whatever amount may legitimately be required, either directly to member banks or, under a ruling now issued by the Federal Reserve Board, indirectly to non-member banks acting through the agency and with the endorsement of a member bank.

PREMIUM STAPLE COTTON

Little demand has occurred for extra staple cotton during the past fortnight. A few inquiries have been reported but in the main business in these grades has been quiet in the extreme. Quotations have undergone but little change, and for the most part are nominal.

The market for Sea Islands has been exceptionally quiet and little interest has been exhibited. Some sales of Meade cotton, of high grade, have been recorded.

EGYPTIAN COTTON

This market has advanced since July 1 on an average of 3½ cents per pound. Many firms are now making quotations on long-staple Egyptian cotton with the addition of the Emergency tariff rate of 7 cents per pound on cotton with a staple 1 3/8 inches or over in length. Using this method the quotation on this date on high grade Sakel would be from 35 to 38 cents per pound as compared with 27 to 30 cents a month ago. Medium Sakels are quoted at 32 to 35 cents. Uppers are quoted at 18 to 20 cents per pound.

Crop reports from Egypt indicate an abundant yield on the acreage planted. It will be recalled, however, that the planting was curtailed one third for a period of three years.

A controversy in regard to shipping the cotton has arisen that may have an adverse effect on the trade. The United States Shipping Board put in a bid 15 shillings to 20 shillings per unit less for freightage to the United States than the English shipping interests. The body at Alexandria in charge of the matter were in favor of accepting the bid of the United States Shipping Board, all except one member who seems to have prevented, up to the moment, the acceptance of the United States bid. It is now reported that if the business is given to the British interests in the face of the United States bid that the Federal Government will invoke the Jones Law against unfair practices which would prevent the British ships laden with this cotton touching at United States ports.

There is no demand for Egyptians on the part of the rubber industry.

ARIZONA COTTON

Although the long-staple Arizona cotton is not subject to the Emergency Tariff tax of seven cents per pound, little demand for the commodity is in evidence. Arizona Egyptians are nominally quoted at 31 cents per pound. No. 1 Pima grades bring 32 to 33 cents. The Arizona crop has been curtailed about 50 per cent.

TIRE FABRICS

The market for tire fabrics has exhibited a somewhat improved tone during the past two weeks. This is largely due to the greatly improved condition of the tire industry. Inquiries have been more frequent than heretofore and a number of good sales have been recorded.

Such price changes as have occured have been of an upward nature. There has been no change in the price of 17¼ ounce Egyptian combed but 17¼ ounce Egyptian carded has increased from .57 to .60 to the present quotation at .65 to .70. Combed and carded peelers, 17¼ ounce have also increased in price until they are now quoted at .65 to .70 and .60 to .65 respectively. Notable advances have taken place in all of the cord fabrics save carded peeler which has remained at the former price of .56.

HOSE AND BELTING DUCKS

Business in hose and belting ducks is reported as having slightly improved although prices remain unchanged in all grades. Belting and hose ducks remain stationary at 25 cents a pound. The same is true in the case of enameling ducks which remain at 25 to 28 cents. Shoe ducks are also quiet and there seems to be but little prospect of activity in this line in view of the fact that many of the factories turning out rubber footwear have either shut down or are running on a greatly reduced basis. Business in the mechanical rubber goods industry seems to be exceptionally quiet.

DRILLS, SHEETINGS AND OSNABURGS

Little business has been transacted in drills and no price changes have been recorded for the period under review. Sheetings have livened up considerably since July 1 and increases in price have been recorded in practically every grade. The same may be said of osnaburgs, notable advances in price having taken place. Light weight burlaps are reported as being fairly steady although factors in the market are expecting lower prices for heavy weight grades.

TIRE FABRICS (Square Woven)				
17¼-ounce Sea Island, combed,	lb.	.90 to .95 (Nominal)		
17¼-ounce Egyptian uppers, combed,	lb.	.70 to .75		
17¼-ounce Egyptian uppers, carded,	lb.	.65 to .70		
17¼-ounce Sakellarides, combed,	lb.	.71 to .76		
17¼-ounce Sakellarides, carded,	lb.	.66 to .71		
17¼-ounce Peelers, combed,	lb.	.65 to .70		
17¼-ounce Peelers, carded,	lb.	.60 to .65		
CORD FABRICS				
Combed Sakellarides	lb.	.76	@	.81
Carded Sakellarides	lb.	.71	@	.76
Combed Peeler	lb.	.71	@	.76
Carded Peeler	lb.	.56	@	——
Carded Arizona	lb.	.70	@	.75
Combed Egyptian uppers	lb.	.76	@	.81
Carded Egyptian uppers	lb.	.70	@	.75
CHAFER FABRIC				
9¼-ounce Sea Island		$1.00	(Nominal)	
9¼-ounce Egyptian, combed		.70	@	.72
9¼-ounce Egyptian, carded		.65	@	.67½
9¼-ounce Peeler, combed		.67½	@	.70
9¼-ounce Peeler, carded		.65	@	.67½
DUCKS				
Belting (pound basis)	lb.	.25	@	——
Hose (pound basis)	lb.	.25	@	.26
*Enameling	lb.	.25	@	.28
Shoe Ducks	lb.	.30	@	——
Single filling	yd.	.10	@	.13½
Double filling	yd.	.13	@	.14

*Price varies according to width.

DRILLS						
37-inch	3.25-yard	yd.	.06¾	@	.07¼
37-inch	2.75-yard	yd.	.08	@	.08¼
37-inch	3.00-yard	yd.	.07¼	@	.07½
37-inch	3.50-yard	yd.	.06½	@	.06¾
37-inch	3.95-yard	yd.	.05¾	@	.06
OSNABURGS						
30-inch	7-ounce		.07	@	.07½
40-inch	7-ounce		.08	@	.09
SHEETINGS						
40-inch	2.35-yard	yd.	.10½	@	.11
40-inch	2.50-yard	yd.	.09½	@	.10
40-inch	2.85-yard	yd.	.08¼	@	.08½
40-inch	3.15-yard	yd.	.09	@	.09½
40-inch	3.60-yard	yd.	.07¾	@	.08
40-inch	3.75-yard	yd.	.06¾	@	.07
40-inch	4.25-yard	yd.	.05½	@	.06
BURLAPS (Carload Lots)						
7 -ounce	40-inch	yd.	3.40	@	——
7½-ounce	40-inch		3.40	@	——
7½-ounce	45-inch		4.25	@	——
8 -ounce	40-inch		3.50	@	——
8½-ounce	40-inch		3.75	@	——
10 -ounce	36-inch		4.15	@	——
10 -ounce	40-inch		4.20	@	——
10 -ounce	45-inch		5.25	@	——
10½-ounce	40-inch		4.40	@	——

Chemicals and Compounding Materials

NEW YORK, JULY 20, 1921

Actual changes in the chemical markets have been slight during the past two weeks. Buying was in small lots and for immediate requirements only, as purchasers are still following a very conservative course. Producers note with interest the increased activity in the tire trade and feel that in some lines, at least, there will be an early advance from the figures now prevailing.

The proposed new tariff rates on chemicals in the Fordney bill have come up for considerable discussion but caused little or no speculative operations. Under the present schedule, which of course may be materially altered, chemicals in general are subject to change from 20 to 30 per cent. Some of the changes contemplated by the Fordney schedule of interest to the rubber interests are given on the next page and in addition the tax as levied under the tariff acts of 1909 and 1913:

	Payne-Aldrich Tariff of 1909	Underwood-Simmons Tariff of 1913	Fordney Bill of 1921
Acetic acid, 65 per cent+	2c	Free	2c
Acetic acid, 65 per cent—	¾c	Free	¾c
Acetic anhydride	2½c	2½c	8c
Ammonium carbonate	1½c	¾c	1½c
Barium carbonate	Free	15 per cent	1c
Barytes, crude	$1.50 a ton	15 per cent	$4.00 a ton
Barytes, manufactured	$5.25 a ton	20 per cent	$7.50 a ton
Blanc fixe	½c	20 per cent	1c
Bone black	25 per cent	15 per cent	20 per cent
Carbon black	—	15 per cent	20 per cent
Castor oil	35c per gal.	12c per gal.	1½c
Caustic soda	½c	¼c	½c
Chrome yellow	4⅜c	20 per cent	25 per cent
Chrome green	4⅜c	20 per cent	25 per cent
Cottonseed oil	Free	Free	2c
Formaldehyde solution	—	1c	25 per cent
Glycerine, crude	1c	1c	1c
Glycerine, refined	3c	2c	3c
Linseed oil	15c per gal.	10c per gal	2½c
Lamp black	25 per cent	15 per cent	20 per cent
Litharge	2½c	25 per cent	2⅞c
Lithophone	1¼c	15 per cent	1½c
Lead compounds	30 per cent	25 per cent	30 per cent
Ochers, siennas, umbers (crude)	⅛c	5 per cent	¼-⅜c
Orange Mineral	3¼c	25 per cent	2⅞c
Peanut oil	Free	6c per gal.	2½c
Rapeseed oil	10c per gal.	6c per gal.	1½c
Soda ash	¼c	Free	¼c
Soya bean oil	Free	Free	2c
Talc	1c	15 per cent	¼c
Sodium carbonate	⅝c	⅛c	⅛c
Ultramarine	3c	15 per cent	3c
Vermilion (with quicksilver)	10c	15 per cent	10c
Vermilion (without quicksilver)	4⅞c	25 per cent	25 per cent
Zinc oxides (dry)	1c	10 per cent	1½c
Zinc oxides (with oil)	1¾c	15 per cent	2c

Duties are given on a per pound basis unless otherwise specified.

Caustic Soda—Demand is quiet with prices easy at $4.15 to $4.25 per hundred for standard brands.

Soda ash—No price changes and market dull with business confined to limited lines and an absence of any particular pressure to sell.

Formaldehyde—The market remains steady with 13 to 13½c prevailing. Buyers are interested only in small lots.

Linseed Oil—Prices lowered during the last week and there were sales at 71 cents per gallon, carlots. Smaller quantities were quoted at 74 cents. The demand was very limited, the aggregate turnover light.

Phenol—The market continues steady at prices up to 12 cents per pound, shading according to quantity and quality, small lots being the rule.

Rapeseed Oil—There were some quotations around 88 to 90 cents per gallon for refined. Blown containers at $1.00 to $1.05.

Aniline Oil—Only a fair demand with prices ruling at 21 to 33 cents per pound.

Blanc Fixe—Buying is confined to small lots with a fair demand and prices steady at 4 to 4¼ cents.

Thiocarbanilide—Prices still at the old level around 50 cents a pound according to brand with little demand.

Barytes—There has been a little better demand and while business has been in small lots dealers report a fair volume and are inclined to be optimistic.

Lithopone—Business is reflecting the vacation season. Very little improvement is expected for another month but there is great confidence shown in the future of the market. Prices steady at 7c a pound for bags to 7¼ for barrels.

Zinc Oxide—Recent price concessions have failed to stimulate the market to any appreciable degree. Business is of a routine character.

ACCELERATORS

Organic

Aldehyde ammonia, crystals	lb.	$ .90	@ .95
Aniline oil, bulk basis,	lb.	.21	@ .23
Excelicrex,	lb.	.60	@ .65
Formaldehyde-aniline	lb.	.60	@ .65
Hexamethylene-tetramine (powdered)	lb.	.90	@ .92
Paraphenylene-diamine	lb.	1.75	@ 2.00
Thiocarbanilid	lb.	.50	@ .55
Vulcocene	lb.	.35	@ ..

Inorganic

Lead, dry red, bbls.	lb.	.08¼	@ .08¾
Litharge, commercial, bbls.	lb.	.08¼	@ .08½
Lime, hydrated	lb.	.01½	@ .02½
Magnesia, calcined, extra light	lb.	.45	@ .55
heavy	lb.	.06	@ .06½
Magnesite, powdered	ton	50.00	@ 70.00

COLORS

Blacks

Bone, powdered	lb.	.06½	@ .08½
Carbon gas	lb.	.10½	@ .45
Drop	lb.	.07½	@ .12
Ivory	lb.	.10½	@ .45
Lampblack	lb.	.15	@ .45
Oxide of iron	lb.	.04½	@ —

Blues

Prussian	lb.	.55	@ .60
Ultramarine	lb.	.10	@ .35
Cobalt	lb.	.25	@ .30
Rubber maker's blue	lb.	3.50	@ ..

Browns

Iron oxide	lb.	.04	@ .08
Sienna, Italian, raw burnt	lb.	.06	@ .15
Umber, Turkey, raw and burnt	lb.	.05	@ .07½

Greens

Chrome, light, c. p.	lb.	.36	@ .40
medium	lb.	.39	@ .51
dark	lb.	.48	@ .54
oxide	lb.	.60	@ .65

Reds

Antimony, crimson sulfuret	lb.	.48	@ .55
red	lb.	.25	@ .28
golden	lb.	.25	@ .30
Indian, pure,	lb.	.13½	@ .16
oxide, copperas, pure	lb.	.13½	@ .15½
reduced	lb.	.11½	@ .12½
Para toner	100 lb.	1.50	@ 1.70
Toluidine toner	lb.	3.25	@ 3.50
Tuscan	lb.	.17½	@ .30
Venetian	lb.	.02½	@ .04½
Vermillion, English, quicksilver	lb.	.90	@ .95
domestic	lb.	.25	@ .30

Yellows

Chrome, light, c. p.	lb.	.21	@ ..
dark	lb.	.21	@ ..
medium	lb.	.21	@ ..
Ocher, French	lb.	.03¼	@ .04
domestic strong	lb.	.03	@ .05
Zinc chromate	lb.	.40	@ .50

COMPOUNDING INGREDIENTS

Aluminum flake, bags	ton	27.00	@ ..
bbls.	ton	33.00	@ ..
Aluminum silicate	ton	16.00	@ 18.00
Ammonium carbonate, powdered	lb.	.07½	@ .09½
Barium dust	lb.	.05	@ ..
Barytes, Southern off-color, f.o.b. mills	ton	16.50	@ 18.00
Western, prime white, f.o.b. mills	ton	24.50	@ 26.50
Beta-naphtol, technical	lb.	.37	@ .40
Blanc fixe, dry, f.o.b. works	lb.	.04	@ .04¼
Cadmium sulphide	lb.	1.20	@ 1.30
Casein, c. p.	lb.	.40	@ .42
Chalk, precipitated, extra light	lb.	.02¾	@ .03⅛
heavy	lb.	.02¼	@ .02½
Clay, China, domestic, lump	ton	7.50	@ 9.00
imported	ton	16.00	@ 24.00
Dixie	ton	22.00	@ 35.00
Blue Ridge	ton	22.00	@ 35.00
Formaldehyde	lb.	.13	@ .14
Fuller's Earth, powdered	ton	22.00	@ ..
Fossil flour	ton	60.00	@ ..
Genasco, mineral rubber	ton	50.00	@ 52.00
Gilsonite	ton	60.00	@ 65.00
Glues, extra white	lb.	.30	@ .40
medium white	lb.	.25	@ .30
cabinet	lb.	.20	@ .35
cabinet low grade	lb.	.17	@ .19
common bone	lb.	.13	@ .19
Graphite flake, bbls.	lb.	.14	@ .20
powdered	lb.	.04	@ .10
Ground glass, fine	lb.	.03½	@ .04
Hydrocarbon, hard	ton	35.00	@ 45.00
soft	ton	35.00	@ 40.00
Infusorial earth, powdered	lb.	.02	@ .03½
bolted	lb.	.03½	@ ..
Lead, sublimed white	lb.	.07¼	@ .07¾
white, basic carbonate	lb.	.08	@ .08½
Liquid rubber	lb.	.16	@ ..
Lithopone, bags, car lots	lb.	.07	@ ..
bbls.	lb.	.07¼	@ ..
M.R.X., mineral rubber	ton	80.00	@ 90.00
Napthalene flakes	lb.	.07	@ .08
Orange Mineral	lb.	.11¾	@ .13½
Plaster of Paris	bbl.	4.25	@ 5.00
Rotten Stone	lb.	.02½	@ .04½
Rubber Substitute, black	lb.	.08	@ .15
white	lb.	.10	@ .17
brown	lb.	.12	@ .16
Silica (silex)	ton	12.00	@ 30.00
Soapstone, powdered	ton	12.00	@ 22.50
Starch, powdered corn	cwt.	2.75	@ 3.25
French	ton	22.50	@ 30.00
Sulphur, flour, commercial	cwt.	1.45	@ 2.10
superfine	cwt.	2.00	@ 2.90
Sulphur, chloride, drums, (see also Colors, Antimony)	lb.	.06	@ .07
Talc, domestic	ton	18.00	@ 22.50
French	ton	27.00	@ 28.00
French, high grade	ton	40.00	@ 42.50
Italian	ton	45.00	@ 46.00
Terra Alba, American No. 1	cwt.	1.85	@ 2.00
American No. 2	cwt.	1.25	@ ..
Tripoli	lb	.02½	@ ..
Whiting, domestic	cwt.	.75	@ .80
Quaker	ton	13.00	@ 15.00
English chalk, commercial	cwt.	1.15	@ 1.20
glider's bolted	cwt.	1.20	@ 1.30
Paris white	cwt.	1.40	@ 1.50
English cliffstone	cwt.	1.65	@ 1.75
Vorite, Rubber Substitute "Soft"	lb.	.14	@ ..
"A"	lb.	.14½	@ ..
"C"	lb.	.14½	@ ..
"Special"	lb.	.14½	@ ..
Zinc Oxide— French process, red seal	lb.	.08¾	@ .09¼
green seal	lb.	.09¾	@ .10¼
white seal	lb.	.11	@ .11¼
Leaded grades, American process— Commercially lead free	lb.	.07½	@ .08½
5 per cent lead sulphate	lb.	.07¼	@ .07¾
10 per cent lead sulphate	lb.	.07	@ .07½
20 per cent lead sulphate	lb.	.07	@ .07½
35 per cent lead sulphate	lb.	.07	@ .07½
Zinc sulphate		.03¼	@ .03½

SOFTENERS

Oils

Castor, No. 3, bbls.	lb.	.08½	@ .09½
Corn, crude, bbls.	lb.	.07	@ .08
refined	lb.	.09¼	@ .09¾
Chinawood, bbls	lb.	.13½	@ .14½
Cottonseed, crude	lb.	.05½	@ —
prime summer yellow	lb.	.08	@ .08¼
Glycerine, c. p. drums	lb.	.16	@ .17
Linseed, carload spot	gal.	.71	@ —
bbls.	gal.	.74	@ —

Palm, Niger	lb.	.05¾ @	.06
Lagos	lb.	.06¾ @	.07
Peanut, domestic crude	lb.	.06 @	.06¼
Pine, steam distilled, over .933 sp. gr.	gal.	1.30 @	1.35
Rapeseed, refined	gal.	.88 @	.90
blown	gal.	1.00 @	1.05
Rosin, first rectified	gal.	.35 @	—
second rectified	gal.	.37 @	—
Tar, commercial	gal.	.35 @	.37
Soya Bean, crude, bbls.	lb.	.07½ @	.07¾
Resins and Pitches			
Cantella gum	lb.	.50 @	..
Cumar resin	lb.	.09 @	.13
Tar, retort	bbl.	11.50 @	—
kiln burnt	bbl.	11.50 @	—
Pitch, Burgundy	lb.	.05 @	.06
coal tar	ton	22.00 @	..
rosin	bbl.	6.75 @	7.00
Rosin, grade B. ex-yard	bbl.	4.90 @	—
grade K	bbl.	6.00 @	—
Shellac, T. N.	lb.	.69 @	.70
fine orange	lb.	Nominal	
bleached, ground	lb.	.68 @	.69
bone dry	lb.	.80 @	.81
Solvents			
Acetone, drums, c.p.	lb.	.12½ @	.13
Alcohol, denatured, No. 1	gal.	.37 @	.38
Methyl, 95 per cent, drums	gal.	.75 @	.77
Ethyl, 190 proof, drums	gal.	4.65 @	4.75
Benzol, 90 per cent	lb.	.25 @	.31
pure	lb.	.27 @	.35
Carbon bisulphide,	lb.	.06½ @	.07½
tetrachloride	lb.	.10½ @	.12
Dimethylaniline	lb.	.42 @	.64
Napths, motor gasoline, steel bbls.	gal.	.26 @	..
68 to 70 degrees	gal.	.35 @	.35½
70 to 72 degrees	gal.	.36½ @	..
73 to 76 degrees	gal.	.37½ @	.38½
machine, steel bbls.	gal.	.43½ @	.47½
solvent,crude,heavy	gal.	.24 @	—
Phenol,	lb.	.09½ @	.12
Toluol, pure, drums	gal.	.27 @	.32
Turpentine, spirits, ex-yard	gal.	.58 @	.60
wood	gal.	.56 @	—
Xyol, pure	gal.	.40 @	.43
commercial	gal.	.28 @	.33
Waxes			
Beeswax white, pure	lb.	.43 @	.44
Carnauba, No. 1	lb.	.46 @	.47
Ceresin, white	lb.	.12½ @	.13
Bayberry	lb.	.20 @	.22
Montan, crude	lb.	.06½ @	.07
Ozokerite, hard, pure	lb.	.30 @	.33
Paraffin, pale, .885 sp. gr.	lb.	.18 @	.21
Petrolatum, amber, bbls.	lb.	.05 @	.05½
dark amber	lb.	.04½ @	..
Zinc sulphate	lb.	.03¼ @	.03½
Acids			
Acetic, 28 per cent	cwt.	2.50 @	2.75
Carbolic (phenol)	lb.	.09½ @	.12
Cresylic, 97 to 99 p. c. pale	gal.	.70 @	.75
Muriatic, 20 degrees	cwt.	1.00 @	1.50
Nitric, 36 degrees	cwt.	5.50 @	6.00
Sulphuric, 66 degrees ton		18.00 @	20.00
60 degrees, bulk	ton	11.00 @	12.00
Tartaric, crystals	lb.	.33 @	.39
Alkalies			
Caustic soda, 76 p.c.	cwt.	4.15 @	4.25
Soda ash, 58 p.c.	cwt.	2.15 @	2.25

Crude Rubber

NEW YORK, JULY 18, 1921

During the past two weeks, the crude rubber market has shown signs of recovering from the extreme depression of June and at this date spot ribbed smoked sheets are selling up to 15c to 15½c. This appears to be due to the evident interest, of manufacturers in the market. They are making frequent inquiries, although not quite buying in any sizable weights.

The fact that crude rubber could have been sold on the New York market for 11½c per pound (and it is said 11¼c) was a phenomenon that can only be classed with other unusual and startling experiences through which the entire rubber trade has passed since June, 1920. The only reason that can be given for a price which is not equal to half the cost of production is the almost total lack of demand upon the part of the manufacturing trade coupled with the large stocks not only in the United States but in London and the primary markets.

Importations of crude rubber according to the statistics compiled by the Rubber Association of America have fallen off about one half during the first six months of 1921 as compared with the corresponding period of 1920, the total imports for the first six months of 1921 being 78,712 tons as compared with 151,889 tons for the first six months of 1920. Such a cut in imports is, of course, only to be expected to follow the long protracted lack of demand from the manufacturers.

The plan of the Rubber Growers' Association of London to induce planters to curtail their production twenty five per cent, which plan was put into operation on November 1, 1920, has already been reported in the RUBBER AGE. It now appears that a great number of planters are putting into effect a fifty per cent curtailment and indeed many are not attempting to tap their trees at all.

The Rubber Growers' Association are now endeavoring to induce planters throughout the British Colonies to make the curtailment as great as possible and also to bring about similar action on the part of the Dutch planters.

It is said that it is possible to put through such curtailments on plantations owned by Europeans, but it is something of a proposition to control the Chinese and Japanese in all of the countries of production.

Whatever may be accomplished along these lines it would appear that with the revival of manufacturing to anything like a normal state there will be a gradually developing shortage of rubber, as after all it will not take very many months to use up the stocks in this country when the manufacturers really get in operation.

Sterling exchange during the past fortnight has not shown any considerable fluctuation. The quotation at the date of writing being $3.62. During the fortnight $3.64 has been quoted.

Quotations on the leading grades of crude rubber as of July 18, 1921 are as follows:

Plantations			
Smoked sheets, ribbed, spot		.15 @	.15½
Aug.-Sept. sheets		.15½ @	.15¾
Oct.-Dec. sheets		.16½ @	—
Oct.-Mar.		.17 @	—
Jan.-Mar.		.17½ @	—
Jan.-June		.18½ @	—
April-June		.19½ @	—
Smoked sheet plain, spot		.14 @	.14½
First latex pale crepe, spot		.17 @	.17½
Aug.-Sept. latex		.17 @	.17½
Oct.-Dec. latex		.18 @	—
Amber crepe, No. 1		.14 @	—
Amber crepe, No. 2		.12½ @	—
Amber crepe, No. 3		.11½ @	—
Grand Central crepe		.10½ @	—
Clean brown crepe		.12½ @	—
Light clean brown crepe		.13½ @	—
Roll brown crepe		.11½ @	—
Africans			
Loando Niggers		.07 @	—
*No. 1 Benguella		.07 @	—
*No. 2 Benguella		.06½ @	—
Lapori Ball		.10 @	.10½
Paras			
Up-river fine		.17¼ @	.17½
Up-river medium		.14¾ @	—
Up-river coarse		.08 @	.08½
Islands fine		.16½ @	—
Islands coarse		.08 @	—
Caucho ball		.10 @	.10¼
Maderia fine		.19 @	—
Cameta		.09 @	—
Centrals			
Corinto prime		.06½ @	—
Esmerelda prime		.06½ @	—
Guayule wet		.15 @	—
Balata Panama Block		25 @	—
Balata sheets		.71 @	.73
Bangermassin		.06¼ @	—
Palembang		.06¾ @	—
Balata Columbian Block		.35 @	.39
Prime Pontianac		.06¼ @	—

*Nominal

Scrap Rubber

NEW YORK, JULY 19, 1921

The scrap rubber market remains practically unchanged, buying being practically at a standstill on account the lack of demand by the reclaimers.

A revision of freight classification has an item of interest to those in this trade. Because of the impracticability of bundling large heavy tires, the Consolidated Classification Committee will establish rating of fourth class applicable to all territories on scrap tires each weighing 50 pounds or over when shipped loose.

Quotations on carload lots delivered as of this date are as follows:

	Cents per	Pound
Auto tire peelings	.02 @	.02¼
Standard White auto	.02¼ @	.02¾
Mixed auto	.01¼ @	.01½
Bicycle tires	.01¼ @	.01½
Solid tires	.02 @	—
Boots and Shoes	.03½ @	.04
Arctics, trimmed	.02¾ @	.03
Arctics, untrimmed	.02 @	.02¼
Battery jars, black compound	.01½ @	.02
No. 1, bright tracture	.12 @	.13
Inner tubes, No. 1	.06 @	.06¼
Inner tubes, compounded	.04 @	.04¼
Inner tubes, red	.04 @	.04¼
Heels and pads	.02 @	.02¼
Black scrap, mixed No. 1	.02¼ @	.03
Black Scrap, mixed No. 2	.01½ @	.02
Garden hose	.01 @	.01½
Air brake hose	.01 @	—
Red packing	.03½ @	.04
Red Scrap, No. 1	.04 @	—
Red Scrap, No. 2	.03½ @	—
White Scrap, No. 1	.05½ @	.06
White Scrap, No. 2	.03 @	—

New Incorporations

California

Coast Rubber Importers Inc., to import rubber and build factories for making rubber goods. $50,000. H. Rassmussen, Alameda; G. Kells, San Francisco; I. V. Quigley, Oakland. Office, San Francisco, California.

Lambert Trublepruf Cord Tire Co., to distribute tires. $10,000. R. H. Ingram, President; A. V. Ingram, vice president; R. L. Hepler, secretary & treasurer. Main office 1408 Market St., San Francisco.

Delaware

Pneumatic Rubber Heel Corporation of America, to manufacture rubber soles $250,000. W. Webster, H. F. Herbermawn and B. Lockwood, incorporators.

Gordon Pen Corporation to manufacture stylographic and fountain pens. $1,000,000. Delaware agent, United States Corporation Co.

Wire Cord Co., to manufacture and deal in crude rubber, gutta percha, etc. $1,000,000. T. L. Croteau, M. A. Bruce & C. L. Maxwell, Wilmington, Del. Delaware agent, Corporation Trust Co. of America, Wilmington, Del.

Georgia

Cotton States Rubber Mfg. Co., to distribute rubber belting. $100,000. H. E. Dennie, C. M. Burnam, J. W. Mowrey, Chicago, Illinois. Main office, 2837 South La Salle St., Chicago, Illinois.

Illinois.

Security Rubber & Belting Co., to distribute rubber belting. $100,000. H. E. Dennie, C. M. Burman, J. W. Mowrey, Chicago, Illinois. Main office, 2837 South La Salle St., Chicago, Illinois.

dent; B. C. Lineberger, vice-president;

Indiana

Hoosier Rubber Co., to manufacture "Service" rubber heels. $150,000. T. Nicar, president; N. V. Robertson, treasurer; G. B. Britton, secretary. Main office, Mishawaka, Indiana.

Maryland

Friant Rubber Co., to deal in rubber goods. $50,000. C. H. Friant, president; C. P. Thompson, vice president; A. T. Knieling, secretary & treasurer of Baltimore, Md. C. Hess, Jr. of Philadelphia, Pa., vice president. Main office 417 West Frankin St., Baltimore, Md.

New York

Alfred Covered Wire Co., to manufacture insulated wire. $6,000. A. Gleckel, 149 Stagg St., F. Romph, 277 Menahan St., J. H. Johansen, 147 Scholes St., Brooklyn, N. Y.

Alto Rubber Co., Inc., to manufacture rubber glue, chemicals, varnish, etc. $6,000 (600 shares no par value). R. Schlissel, 465 East 167 St., H. Hewitt, 333 West 21st St., New York city; S. Moore, 179 Jefferson Ave., Brooklyn, N. Y.

Azif & Honig Tire Co., Inc., to manufacture tires. $30,000. M. Azif, E. K. Azif, S. G. Honig, 974 St. Nicholas Ave., New York.

Bedford Auto Rim Co., to manufacture tires and rims. $100,000. C. Z. Weiner & F. Weiner, 520 Lafayette Ave., Brooklyn, N. Y., I. S. Natkin, 8902-107 St., Richmond Hill, L. I. Principal office, Brooklyn.

Houston Wheel Sales Corp., for New York & New Jersey, to sell the Houston puncture proof pneumatic wheel. $10,000. J. M. Grant, President; C. A. Holstein & H. S. Gay vice-Presidents; J. P. Trant, treasurer; A. S. Jameson, secretary. Office 120 Broadway, New York, N. Y.

Ruberoid Co., Inc. to manufacture insulating materials, etc. $5,000. H. Abraham, H. F. Gillespie & F. Jellenik, 95 Madison Ave, New York, N. Y.

New Jersey

Angoreon Co., to manufacture rubber and other materials. $1,000,000. D. L. Gordon, 27 High St., T. A. Hopkins, 230 High St., Passaic, N. J.; J. F. Connolly, 731 Atwell Ave., Providence R. I. Prifeipal office, 625 Main Ave., Passaic, N. J.

North Carolina

Champion Manufacturing Co. to manufacture & distribute automobile tire patches. $50,000. K. B. Nixon, president; B. C. Lineberger, vice president; M. M. Rudisill, secretary & treasurer. Main office, Lincolnton, North Carolina.

Paul Rubber Co., to manufacture tires and other rubber products. $250,000 M. L. Miller, W. J. McDaniel, E. C. Brainard, Salisbury, North Carolina. Main office, 310 Wallace Building, Salisbury, N. C.

Ohio

Lake Erie Rubber Products Co. to distribute tires, etc. $50,000. L. H. Irwin, president; J. W. Lawrence, vice president & treasurer; M. Jenkins, secretary. Main office, 632 Frankfort Ave., N. W. Cleveland, Ohio.

Oklahoma

Berry Gorman Tire & Rubber Co., to buy, sell & deal in tires and automobile accessories. $150,000. H. Gorman, W. C. Berry, and H. H. Hensley, Tusla, Oklahoma. Main office 209 East Second street, Tulsa, Oklahoma.

Akron Stock Prices

(Special Akron Correspondence)

Akron rubber companies entered the last half of 1921 on a money-making basis, according to reports in Akron financial circles. Greatly increased production and decreased overhead charges are responsible, it is said.

This changed condition is noted in the tendency of most stocks listed on the Akron exchange to resist the general downward trend in other financial markets.

Goodyear issues are firm. Common is selling at 10 and preferred is changing hands at 24.

Goodrich common holds around the 30 mark, while 68½ is being asked for the preferred.

Firestone common is up several points with 55 bid and 60 asked. The six per cent preferred issue of this company is attracting bids of 80 with no stock being offered, while 64 bid for the seven per cent has failed to bring out any stock.

Miller common is being offered at 55 and the preferred at 68, both figures showing distinct gains.

Amazon Rubber refinancing is not completed, but is understood that stockholders have pledged $65,000 of the $75,000 asked and details of the reorganization are expected soon.

Following are quotations for July 17:

	Bid	Asked
Amer. R. & T. com	30	40
Amer. R. & T.	..	80
Amazon Rubber	..	20
Firestone T. & R. com	55	60
do 6 pct. pfd.	80	..
do 7 pct. pfd.	64	..
General T. & R. com	..	200
do 7 pct. pfd.	70	85
B. F. Goodrich com	29¾	31
do 7 pct. pfd.	67	68½
do 5 yr. 7 pct. notes	89	89½
Goodyear T. & R. com	9¾	10
do 7 pct. pfd.	23½	24½
Goodyear 8's	99⅛	99⅞
India Rubber com	60	75
do 7 pct. pfd.	70	80
Mason T. & R. com	10	11
do 7 pct. pfd.	48½	50
Marathon T. & R. com	2½	3½
Miller Rubber com	50	55
do 8 pct. pfd.	59	68
Mohawk Rubber	..	80
Portage Rubber	..	10
do 7 pct. pfd.	5	10
Phoenix Rub. com	..	15
do pfd.	..	90
Republic Rubber com	..	⅜
do 7 pct. pfd.	..	6
do 7 pct. pfd.	3	5
Rubber Products	..	50
Star Rubber com	..	100
do 8 pct. pfd.	..	100
Swinehart T. & R. com	..	40
do 7 pct. pfd.	..	70
Standard Tire com	..	100
do pfd.	..	90

New York Stock Prices

Following are the New York Stock Exchange quotations on the various rubber stocks listed for July 19:

	Bid	Asked
Ajax Rubber Co.	20	21
Fisk Rubber Co.	11½	11⅞
B. F. Goodrich Co.	30½	31⅛
Kelly-Springfield Tire Co.	36½	37⅛
Keystone Tire & Rubber Co.	11⅞	11¾
Lee Rubber & Tire Co.	27	27¾
U. S. Rubber Co.	50¼	50⅜
do. 1st. pfd.	92¾	94¼

American Rubber Patents

ISSUED JUNE 21, 1921

1,381,934—To Frederick V. Roesel, Wellington, Ohio, assignor of one-half to Eben Miller, Perry, Iowa. Core for resilient wheel-tires.

1,381,966—To Donald M. Campbell and Harry E. Little, Wichita, Kans. Tire-patch.

1,382,007—Ho Thomas Midgley, Sr., Worthington, Ohio, assignor to Fisk Rubber Co., Chicaopee Falls, Mass. Collapsible core.

1,382,035—To Frank A. Watson, Springfield, Ohio. Collapsible tire-core.

1,382,045—To Elmer Ziegler, Fort Pierre, S. D. Tire-chain retainer.

1,382,207—To Lee R. McGuire, Akron, Ohio, assignor to Firestone Tire & Rubber Co., Akron, Ohio. Rubber extruding, cooling and cutting apparatus.

1,382,208—To Harvey F. Maranville, Akron, Ohio, assignor to Firestone Tire & Rubber Co., Akron, Ohio. Method for making articles of fabric and rubber.

1,382,216—To Amos F. Morey, Oklahoma City, Okla. Pneumatic tire.

1,382,367—To Karl B. Kilborn, Akron, Ohio, assignor to Goodyear Tire & Rubber Co., Akron, Ohio. Method of building tires

1,382,281—To Mendel Pianko, Chicago, Ill. Tire-armor.

1,382,399—To Joseph S. Williams, Riverton, N. J. Resilient tire.

1,382,474—To George Codish, Brooklyn, N. Y. Armor for pneumatic tires.

1,382,565—To Hans E. Stockel, Chicago, Ill. Armored liner for tires.

ISSUED JUNE 28, 1921

1,382,630—To Laurence R. Davis, Providence, R. I., assignor to Revere Rubber Co. Resilient tire.

1,382,718—To Henry C. Egerton, Ridgewood, N. J. Automobile-tire.

1,382,748—To Kate Slasor, Seattle, Wash. Footwear-protector.

1,382,768—To George Ferguson, Wollaston, Mass., assignor to United Shoe Machinery Corporation, Paterson, N. J. Rubber sole for boots and shoes.

1,382,774—To William C. Geer, Akron, Ohio, assignor to B. F. Goodrich Co., Akron, Ohio. Rubber article and method of making same.

1,382,844—To Archibald O. Mason, Highland Park, Ill. Reliner.

1,382,918—To Acgustus Hallawell Kerr, Fort Worth, Texas. Pneumatic cushioned tire.

1,382,948—To Charles J. Berthel, Akron, Ohio. Vulcanizing oven.

1,383,067—To Emil Borman, Chicago, Ill. Pneumatic heel.

1,383,155—To Leo J. Schaefer, Toledo, Ohio. Rubber heel.

1,383,190—To Detereos J. Demas, Pittsburgh, Pa. Tire.

1,383,261—To Watson E. Tubbs, Milwaukee, Wis. Anti-skidding device.

Rubber Growers Reduce Output

The British Rubber Growers' Association passed a resolution July 7 recommending producers to take immediate steps to reduce by fifty per cent the output of the association's membership. It is preparing a scheme for creating a selling organization with a view to control of prices.